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Issue 44 £1.75
June/July

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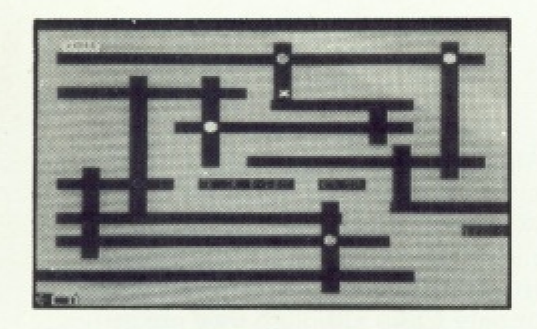
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'The magazine for the Dedicated Atari User'

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How does your garden grow?
Type it in and see!

ST FILE

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SUBMISSIONS

PAGE 6 welcomes and encourages its readers to submit, articles, programs and reviews for publication. Programs must be submitted on disk or cassette, articles should wherever possible be submitted as text files on disk. We seek to encourage your participation and do not have strict rules for submissions. If something interests you, write a program or article and submit it! Appropriate payment will be made for all published programs and articles.

The next issue of NEW ATARI USER will be on sale 26th July
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PAGE 6 PUBLISHING's
NEW
ATARI
USER

Editorial

Issue 44
June/July 1990

'The Magazine for the Dedicated Atari User'

ISSN No. 0958-7705

THE CREDITS

All of the usual stuff is on page 3 but here are the people who made this issue possible.

Les Ellingham did the editing, layout and everything else (as well as helping with the cricket nets, trying to get sense out of the Gas Board, trying to find a plasterer and taking a little time out building dry stone walls in the bedroom!)

Sandy looked after the advertising and mail order and lots of other things

John R. Barnsley is still doing this and that, mostly this which doesn't leave a lot of time for that.

Mrs S. Busby has now taken over from Stacey Mitchell. She's still settling in and we'll let you know how she gets on provided we don't all go down with Mad Cow disease and can stand that funny smell from her wellies!

The Regular Contributors, who provide the backbone of the magazine and can generally be relied upon to come up with good articles and reviews, are ....

Garry Francis | **Mark Hutchinson**
John S Davison | **John Davison jr**
John Sweeney | **Paul Rixon**
Damon Howarth | **Ian Finlayson**

All other contributors for this issue are individually credited alongside their articles or programs. Thanks to everybody for sharing their work and enthusiasm with other Atari users.

Goodbye Matthew ... and thanks

The cover picture is by **Paul Lingwood** and the hands belong to our local tax inspector (we had to shave all the hair off)

New music this time from Robert Earl Keen Jr (touches of John Prine and Lyle Lovett) together with new ones from Suzanne Vega, Johnny Clegg and The Best of Van Morrison (76 minutes worth!). Also Heart's Brigade that takes time to grow, Martha's Vineyard, The Cowboy Junkies and Chris Rea as well as many of the regulars, looks like the music is coming back this time. By the time this is finished Daniel Lanois could be included but buying CDs in Stafford is only marginally better than trying to get a bottle of Glenfiddich in Saudi Arabia!

NEW ATARI USER is the magazine, PAGE 6 is the concept. Wherever you see PAGE 6 you'll know what it means!

The next issue of NEW ATARI USER could feature YOUR article or program, so SEND IT IN NOW!

PAGE 6 shows just what you can do with your Atari. With the exception of final output on a Linotron and use of a repro camera for the listings and photos, the magazine is prepared entirely with Atari based equipment and software - not a Macintosh or IBM in sight! Hardware used includes 130XE, 1050 disk drive, 810 disk drive, 410 cassette (occasionally!), 850 Interface, NEC 8023 printer, 1040ST, SM124 Monitor, Atari SH204 hard disk drive, Cumana 1 meg disk drive, Epson RX100 printer, Kyocera laser printer, Microstuffer printer buffer. Software includes Superscript, Turbo Basic, Kermit, PC Intercomm, TARI-TALK, Print Wiz, STWriter, Protext and Fleet Street Publisher. Articles and programs submitted on XL/XE disks are subjected to various custom written programs before being transferred across to the ST via TARI-TALK. All major editing is done with Protext and pages are laid out with Fleet Street Publisher. A disk with the finished pages is sent up to The Setting Studio in Newcastle (a typesetting bureau who really know what they are doing with the ST) to be output on a Linotron 300 and, hey presto, finished pages are sent back. It really does work - at last! All that is left is to drop in the listings and photos. Well, it's not quite as easy as that, but you get the idea!

SHOW TIME AGAIN

This issue should reach you just before the Atari 90 Show at the Novotel but this editorial is being written some six weeks beforehand and I can't help wondering, or worrying, about the show. The last Atari show hosted by Database last June was a flop with only half the number of visitors from previous shows turning up and I hope that the same thing doesn't happen with Atari 90. Atari seem to have the right ideas about pricing for the public with admission at only £2.00 although they are getting their money back from the exhibitors as the stands are the most expensive of any show we have attended. Most visitors don't realise the cost to an exhibitor of attending these events and small companies such as ourselves need to do a lot of selling just to break even. Whilst it is nice to treat these shows as a public relations exercise, as most of the big companies do, we have to be realistic and try not to lose money. We will, as usual, be supporting both the XL/XE and ST machines but we need to put more emphasis on the ST side since that is where the money now is. Just how much 8-bit support there will be is open to question but we do know that Miles Better Software, for one, will be going with, hopefully, a lot of software bargains for you. Let's hope that there are a few more stands giving 8-bit support.

All we can do I suppose is go along and hope that you all go to. Let's hope too that it is not filled with irrelevancies like Atari PC's and TT's which are of interest only to the the minority. It will be good to see you all there, we'll be downstairs on stand 120!

RADIO SHOWS

Continuing the show theme but on a much lower key, I wonder how many of you go along to the various amateur radio rallies that are held in various parts of the country? There was one in Birmingham over Easter and, whilst I could not get along to it, Derek Fern who does a great deal to support the 8-bit hardware wise had a table and reported brisk business and a lot of interest. These rallies are more suited to the hardware buff than those interested in software so I wonder how we would fare if we went along to one as an exhibitor? One thing that these have over other shows is that they are held in all different parts of the country and could provide a unique opportunity to meet readers that don't venture down to the Big City and the Big City shows. Besides, at those, there is little opportunity to chat since we have to sell, sell, sell to get our money back. Perhaps some of you could drop us a line and let us know what you think. Would you come along to see us at a radio rally? I understand that there is one coming up soon in Nottingham but there are many others all over the country, does anyone have the details?

The Alternative Micro Show last year was really great and these small shows may well be the future for the 8-bit. Incidentally we hear that this years Alternative Micro Show will again take place in Stafford in November. Couldn't be better for us!

SOFTWARE SUPPORT

Those of you who read our Accessory Shop updates (free if you ask) will have noted that we have obtained an agreement with Database Software to market Mini Office II for the 8-bit now that the original stock is sold out. This is great news for all Atari owners as it means that we are able to keep one of the best serious programs from dying away. We have done the same with Transdisk IV and Midimaster and, hopefully, we can continue to do this with other products which would otherwise disappear. There are still plenty of games around but the more serious software is fast disappearing and it is unlikely that any new stuff will appear. Did you know, for instance that Atari have a, supposedly, top-class desktop publishing program for the XL/XE that they do not wish to release because it is only on disk? The distribution situation in the country is such that only cassette based software has any chance of making it to the shops. Funny that, as we find just the opposite, we can't get rid of cassettes but disks sell fine. Most probably, it is because our readership consists of the more dedicated Atari fan. Anyway, this DTP program was offered to PAGE 6 just before Christmas and we would dearly love to market it but we just can't get Atari to send us a copy. Believe me, we have tried! If anyone fancies dropping Atari a line to support the cause, please do so and let them know that you still want serious software and if the author of said program is reading this perhaps he would get in touch since his program is currently gather dust rather than royalties!

Les Ellingham

There will be even more hardware at the Atari 90's Show.

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Naturally, the rest of Atari's huge range of products will be there too, including the highly-acclaimed range of PC compatibles and the powerful new ST machines.

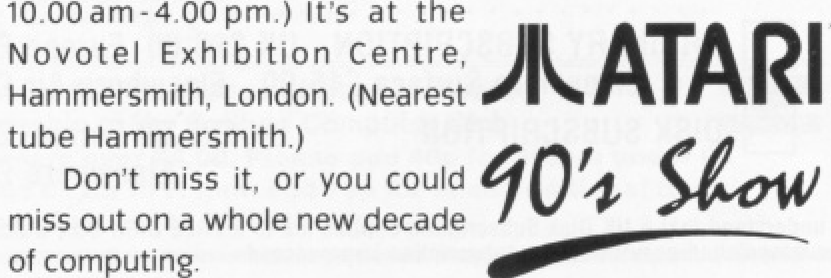
There'll be people on hand to help you choose new equipment.

Or, if you simply want to get more out of what you've already got, there'll be free seminars, user workshops and technical clinics. And, in our massive games arcade, you can check out all the latest software.

Admission is just £2, or bring the family for £4 (2 adults, 2 kids. Extra kids £1).

The Show's on from 1st - 3rd June 1990. (Friday 1st and Saturday 2nd, 10.00 am - 6.00 pm. Sunday 3rd, 10.00 am - 4.00 pm.) It's at the Novotel Exhibition Centre, Hammersmith, London. (Nearest tube Hammersmith.)

Don't miss it, or you could miss out on a whole new decade of computing.



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GET REGULAR!

A subscription to NEW ATARI USER is well worth while as it ensures that you are not the one who is five minutes too late at your local newsagents when the next issue is snapped up and it helps us to keep publishing the only magazine to support all Atari home computers. If you love your Atari, keep feeding it the best diet around - NEW ATARI USER every couple of months. If you subscribe, a copy will drop through your door just when you are expecting it.

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A Disk Subscription (including the magazine) costs just £25* and that represents a saving of OVER £3 against buying the magazine and disk separately! Add the cost of the disk box and you are SAVING AROUND £8! Don't it just make sense?

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Please debit my credit card with the amount shown above

Signature ....

Please feel free to photocopy this form or write your order (clearly please!) if you do not wish to cut the magazine

newscene

NOT A FANTASY!

Shortly after the copy date for the last issue we received a press release from Fantasy Productions in Harlow advising of the release of a new range of programs for the XL/XE. The company's first release is titled **POD 1** which is described as having been 7 months in the making and featuring "some of the highest standard multiload background screens seen on the Atari" along with "the most atmospheric introductions with high quality music and gameplay". It doesn't actually say what the game is about!

POD 1 is to be released on disk only at £6.95 and is to be followed by **FLUX THE FLEA** in June at £6.95 on disk and £2.95 on cassette, **ELECTROFAX** in July at £14.95 on disk, **10 DOWNING STREET** in September at £6.95 on disk and £2.95 on cassette and, finally, **POD 2** in December, again on disk only at £8.95. Fantasy say that they will be supporting the 8-bit Atari throughout the year and, depending on sales, throughout the early part of the 90's.

We have no information on how the games will be distributed and since the major distributors will not touch disk based software for the Atari, Fantasy may well have problems with sales. We can only suggest that you try the mail order suppliers like Sunaro, Callisto and Miles Better to see if they have these games in stock.

POSTMAN PAT'S NON DELIVERY

If you have been patiently waiting for Pat and Jess to turn up at your front door, then you are going to be disappointed because Alternative have given up on the Atari 8-bit version of the game. We are not sure why because, judging by the ST version, it should be quite a simple game to implement on the 8-bit. Better news is that Alternative do plan to release other titles for the 8-bit. A new label has been launched called Friendly Learning and will feature a number of licences of children's favourites including Thomas The Tank due out on the Atari 8-bit in June. Most of the titles are planned for the ST but Alternative do say that they intend to release many of their titles on the 8-bit during the year. The Friendly Learning titles are educational and include **THOMAS THE TANK'S FUN WITH WORDS**, **SOOTY AND SWEEP'S FUN WITH NUMBERS** and **POSTMAN PAT'S SHAPES AND SIZES**. These will all be at £19.99 on the ST.

Another 8-bit title due soon is **STORM FORCE** produced in conjunction with the Royal National Lifeboat Institution who will get a proportion of the proceeds.

ALTERNATIVE SHOW

We have now had confirmation that the Fourth Alternative Micro Show will be held at the Bingley Hall, Stafford on Saturday 10th November where the usual delights of 8-bit bits and pieces, amateur radio and sundry bargains will be available. Last year's show was great and we will definitely be at this year's. The cost of a stand is quite reasonable and the show is open to hobbyists and user groups as well as businesses. If you are going to book a stand please let us know and we will, in turn, let our readers know what to expect.

HARLEQUIN

We now have details of the range of games that Harlequin intend to release over the coming year. Firstly there is the already advertised **PLASTRON** which should have been around for a while now together with **ZERO WAR** and **PROJECT XANTHION** which are imminent, all priced at £7.99 on cassette and £9.99 on disk. In August you can expect **MENACE** at £9.99 on cassette and £12.99 on disk followed in September by **SHADOW OF THE GHOST** at £12.99 and £14.99. Also due in September are **KICK OFF PLUS**, **PLAYER MANAGER** and **DEFENDERS OF THE EARTH**. The first of those is £7.99 on cassette and £9.99 on disk and the others are £9.99 on cassette and £12.99 on disk. Sounds like some good stuff is coming our way. We'll bring you reviews as soon as we get the review copies.

Mailbag

Got a point to make?

Got any questions to ask?

Write to Mailbag P.O. Box 54 Stafford ST 16 1DR

A SUPER XL?

I use my 800XL, 1050 drive and an Amstrad DMP3160 printer to help with my administration of my local cricket club. I use Mini Office II, Visicalc, Textpro and Print Shop for most of the time and am getting tired of the continual changing of disks when loading different programs or files. Having used an IBM clone with hard disk at work I realise that if I could afford to purchase the latter it would probably solve my problems.

What I do have though is the main 'board' from a defunct 800XL which I would like to link up to my machine to make use of the extra RAM etc. Would this be possible in some form? If so how would I go about it and would it mean that I could hold more than one program in memory? Would it also be possible to have a menu from which I can load different programs as I do at work?

Graham Winn
Southend, Essex

The extra board is virtually useless for this application although you might be able to use the RAM chips in another application. It is quite possible to extend the 800XL to 256k or even 512k but the main problems are in writing the software to take advantage of the extra RAM. In theory a 512k machine could load several programs, holding them in high memory and switching them to normal memory on command but the software involved would be as complicated to write as the original programs themselves and I cannot see anyone doing it. Even on machines like the ST switching of programs is not common and is fraught with problems. A hard drive may, as you say, be the answer to your problems and a hard drive is available for the XL from ICD (distributed by Frontier Software in this country) but it will set you back around £800! Even then you may have problems in transferring programs like Mini Office II which normally need to be booted from drive 1. If I were you, I would be satisfied to know that your humble 800XL can cope with the tasks you need and put up with a little bit of disk swapping.

READ THE ADVERTS

I would like to know how to go about getting a software game that has been advertised in your magazine, the game I would like is Darg which is available on B.Ware Software price £5.95. Is it for use on the XL/XE range? Also can you tell me if Skull Duggery is available on the XL/XE?

T.A Summerskill
Lancaster

As we stated in the review, Darg is only available direct from B.Ware whose address is 19 Southfield Road, Hinckley, Leics. LE10 1UA. They take credit cards and you can reach them on 0456 613377. Whenever you want software please check out the advertisements in the magazine, B.Ware have an advertisement on page 17 of the issue in which Darg was reviewed and there are other advertisers who you can contact for software rather than writing to us. The advertisements are an important part of the magazine since these people are the only ones giving support for your machine and they need your support in turn. If you don't take notice of the advertisers they will eventually give up and stop advertising and when that happens you may well lose the only magazine that is devoted to your computer. So please, always read the adverts. Skull Duggery is not available on the XL/XE but it is, basically, a copy of Boulderdash or Boulderdash 2 which are available. Check the adverts!

TEXTPRO TIPS

I wonder how many readers, like myself, who bought TEXTPRO 1.2 and DAISY DOT II from your public domain library have found that TEXTPRO does not produce the backslash character (SHIFT-LEFT ARROW on the 800XL) which is essential for DAISY DOT print format? The arrow keys only operate cursor movement with either Shift of Control.

Quite by accident I found the correct sequence - ESCape-SHIFT-LEFT ARROW - and this is used to produce the upper case on all four arrow keys. What a pity that, in spite of the massive 22 page manual, this was not mentioned.

Possibly all this is elementary to most of your readers but I thought it worth a mention if only to help the few who might have the same problem. Thank you for an excellent PD library. Most of your disks, and especially TEXTPRO and DAISY DOT are worth many times the asking price. Keep up the good work.

D.E. Fogerty,
Salisbury

Thanks for the tip. Never assume that all is elementary to other users, many just give up when they come across problems like this and never use the software again. Someone, somewhere will now get out Textpro and Daisy Dot and start using them. Any other tips like this are more than welcome and stand a good chance of a mention.

MORE HARDWARE

Is there any chance of you continuing with the EXPANDING YOUR ATARI series from Issue 32? I've been waiting for a long time for somebody else to write in and ask for it but nobody did so I've broken the habit of a lifetime and actually written my first letter to a magazine.

It's a great magazine, keep up the good work. How about doing reviews of your PD software?

T. Brill,
Orpington

We discontinued the series mentioned because there were mistakes in some of the articles and since we know little about hardware ourselves it is virtually impossible to check out hardware projects before publishing them. The article in the last issue on the write protect switch aroused a lot or interest and comment and, if we get more projects like this written up we will publish them but only if they come from sources we know are reliable. It is not worth publishing details of projects which may not work or may even damage your computer.

MOUSE TALES

Please could you tell me if there is a special mouse for the XL/XE computers? If not can you use an ST mouse on the XL/XE games and software?

Gary Jones,
Leigh-on-Sea

There is no special mouse but an ST mouse can be plugged into the joystick ports and will work without problem, provided that the software you wish to run has been written for mouse control. Virtually every commercial game is written for joystick only and so plugging in a mouse is no good. Our Multi-Mouse article in Issue 42 contained a driver for a mouse so that you could write your own software and products such as Diamond GOS also use a mouse but the chances of commercial games ever being written to use a mouse is, unfortunately, remote.

GOOD SERVICE

Whilst reading Issue 38 of New Atari User I noticed your article on page 10 about Mr E. Hughes offering to make copies of the games he has typed in from listings in the old Atari User. Since then I have twice sent the necessary i.e. C60 tape, £1 cheque and s.a.e. to Mr Hughes and have swiftly received the tapes back full of games. All the games have been reloaded and tested satisfactorily by Mr Hughes before he has returned the tapes. Just thought I would let you know what a good, quick and efficient service Mr Hughes is providing as your article suggested you would like some feedback.

Owen Morgan,
Stockport

Thanks for taking the trouble to write, Owen. It is good to hear that Mr Hughes is providing a useful service to Atari users and long may it continue. We don't, unfortunately, often get letters praising good service, more often people only write when something goes wrong but I hasten to add that we have not received any complaints at all as far as Mr Hughes is concerned.

SAVE THAT SWITCH

I own an Atari 65XE and, as you know, when you wish to load a boot cassette the manual says that you should switch the machine off and then on again whilst holding the START and OPTION keys down. Well, I thought it would be a good ides to point out that you can load boot cassettes without the power switch being used. If you type X=USR(58487) then, whilst holding START and OPTION, press Return, the screen will go black for a moment and then you will get the normal blue screen and a single beep to tell you to load your cassette.

This will save wear and tear on the power switch. Most programs can be reset using the Reset key but there are some which will still need to be reset using the power switch.

Brian Wright,
Bishop Auckland

ORDINARY CASSETTE

I have an 800XL and 1010 cassette recorder and as you are no doubt aware, the play buttons are inclined to break. Although I am able to purchase replacements (from Derek Fern) I should like to use my standard cassette deck as a standby whilst awaiting new buttons. Could you please tell me which pin-outs to connect to my recorder.

B. Rolfe
Merseyside

Unfortunately you can't use an ordinary cassette recorder with your Atari unless you have got a specially built interface. A few years ago there was such an interface available from one of our advertisers but this was discontinued some time ago. You'll just have to wait for the buttons.

RUNNING A BUSINESS

I am at present using an 800XL and 1050 drive with a 1029 printer which, couple with Visicalc and Mini Office II I am using to run my business. I wish to upgrade to an Atari ST system with printer but first would like to know what system/software I could use and whether I would be able to transfer my business data (mainly Visicalc) to the new system. As I manage most of my work on the spreadsheet I have no dire need for a word processor or database, although a graphics package would be useful. I would be grateful for any help you could pass on.

Paul Fortune
Exeter

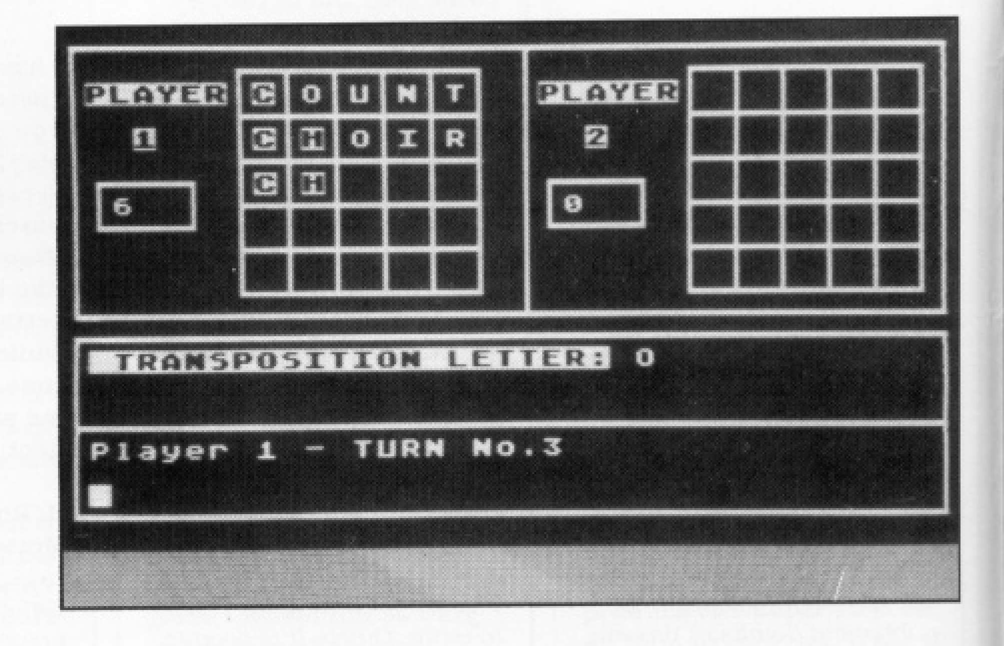
If your 800XL can cope with your business needs then any ST will do, there is no need to go to 1Mb and hard disks and the like. There are a number of spreadsheets for the ST, all of which work without problem but, strangely, Visicalc is not available. I use VIP Professional which is excellent and which can now be picked up (split from the Atari Business packs) very cheaply. I can't say for certain but VIP should be able to accept Visicalc data depending on how the 8-bit version of Visicalc can save files. You might have to re-save your files in a different format. Data can be transferred to the ST with our own TARITALK and you should have no problems in getting all of your data across. The only problems you might encounter are in translating data to use in programs on the ST but most of the time it can be done quite simply.

Your 1029 printer is no use with an ST but you can pick up Centronics printers like the Citizen 120D and Panasonic models quite cheaply and no extra interface is required.

Bear in mind that software on the ST is expensive. Mini Office II, for example which cost £19.95 for the six programs on the 8-bit is available but only as six separate modules (some are still to be released) the total cost of which is over £150! Unfortunately it is impossible to give firm advice on exactly what software you should use as much depends on personal preference. Whatever you use, you may well find that added features make it a much longer process to learn to use the software properly. I would suggest that you go along to one of the Atari shows or find a good retailer who can show you the differences between different packages. Try Software Express in Plymouth who will, I am sure, take the time to advise you on what is available.

GUESS and COUNT

Guess and Count is an educational game for the not so young and ... older children. An Atari computer with at least 32K is required to run this program



by Robert de Letter

Playing this game is very simple. The computer selects a word (5 letters) and it is your duty to find this word in 5 or less turns. When the cursor appears type in your choice.

- If you can't guess a word you will be penalized by 10 points
- If the word is found, a counter starts running from 0 to 9. Stop the counter by pressing the space-bar. This number will be added to your score
- If you can stop the counter at '2' (wild number) you may choose any number from 0 to 9 to add to your score
- The player who first reaches '77' is the winner. If your score exceeds '77' you will be penalized again for 10 points. The points above '77' will also be subtracted from your score
- If the word is found at one time the computer asks you if you want the 10 bonus points (remember not to go above '77')
- The first letter of the word you are searching for will appear on the screen in inverse video. Then type in a word that begins with this letter
- Every letter that is in the right position will also be printed to the screen in inverse video. If one or more letters are in transposition you will be given only one of them
- A player loses his turn:
  - If the word isn't found
  - If 5 turns are needed
  - If the counter stops at '0'
  - If the score exceeds '77'
- If a word is not guessed the computer will not tell you what it was. This is done to 'save' words. The word will be added again to a string WORD$. All together there are 405 words to play with
- You can expand this program to play with more than 405 words. To avoid a memory conflict leave out W$. The variable 'F' contains the number of words used in this game. If all words are used (line 1220) WORD$ is refilled with W$. If W$ is left out the game should be amended to re-read the DATA. To find all occurrences of W$,F,WORD$.. use my program FINDER (issue 37)
- To see which words are used in 'Guess and Count' type in listing 2 with the main program in memory. After this type GOTO 10000 and press RETURN

I hope that you enjoy Guess and Count, it may appear to be a simple looking program but it should prove quite a challenge to players of all ages.

GUESS and COUNT

```
EX 1 REM ##########################################
PI 2 REM #       GUESS and COUNT                  #
GE 3 REM #    by Robert de Letter                 #
HB 4 REM # ------------------------------------- #
RF 5 REM # NEW ATARI USER - June 1990 #
FC 6 REM ##########################################
NM 7 REM
KO 10 GOTO 1520
BI 20 REM  SUBROUTINES 
MV 30 POKE 752,PEEK(752)=0:RETURN
EV 40 FOR I=1 TO 20:SOUND 0,28,10,15:NEXT
   I:SOUND 0,0,0,0:RETURN
FN 50 FOR W=1 TO 20:SOUND 3,15,2,4:NEXT W
   :SOUND 3,0,0,0:RETURN
LD 60 FOR I=1 TO 50:SOUND 3,100,12,15:NEX
   T I:SOUND 3,0,0,0:RETURN
RK 70 FOR X=9 TO 17 STEP 2:FOR Y=3 TO 11
   STEP 2:POSITION X,Y:? " ":NEXT Y:NEXT
   X:RETURN
OG 80 FOR X=28 TO 36 STEP 2:FOR Y=3 TO 11
   STEP 2:POSITION X,Y:? " ":NEXT Y:NEXT
   X:RETURN
AT 90 IF T>=5 THEN 120
PD 100 IF NB=0 THEN 120
YZ 110 RETURN
PK 120 PL= NOT PL:RETURN
AN 130 FOR I=15 TO 17:POSITION 2,I:? ER$:
   NEXT I:FOR I=19 TO 21:POSITION 2,I:? E
   R$:NEXT I:RETURN
YV 140 FOR I=1 TO 180:NEXT I:RETURN
YE 150 FOR I=1 TO 350:NEXT I:RETURN
OF 160 FOR I=15 TO 0 STEP -0.4:SOUND 0,12
   ,2,I:NEXT I:RETURN
CP 170 REM  COUNT 
VO 180 POSITION 2,15:? "Player ";PL+1;" P
   ress space-bar to stop...":POKE 764,25
   5:GOSUB 140:NB=INT(RND(0)*10)
EV 190 POSITION 17,17:? ">>";NB;"<<":SOUN
   D 3,20,0,6
SG 200 IF PEEK(764)=33 THEN 230
RX 210 POKE 764,255:SOUND 3,0,0,0:NB=NB+1
   :IF NB>9 THEN NB=0
QC 220 FOR I=1 TO 9:NEXT I:GOTO 190
PT 230 SOUND 3,0,0,0:GOSUB 150:IF NB=2 TH
   EN GOSUB 130:POSITION 2,19:? "  THE WI
   LD NUMBER !! ":POKE 764,255:GOTO 250
OY 240 GOTO 270
SH 250 POSITION 2,20:? "Select a number (
   0-9)":OPEN #1,4,0,"K:":GET #1,K:IF K<4
   8 OR K>57 THEN CLOSE #1:GOTO 250
HH 260 CLOSE #1:NB=K-48
NZ 270 IF T=1 THEN GOSUB 130:GOTO 290
KW 280 GOSUB 140:GOSUB 920:GOSUB 130:GOSU
   B 90:GOSUB 140:POKE 764,255:GOTO 350
NC 290 POSITION 2,15:? "       WORD FOUND A
   T ONE TIME !       ":POSITION 2,17
HU 300 ? "DO YOU WANT THE 10 BONUS POINTS
   -Y/N":POKE 764,255:OPEN #1,4,0,"K:":GE
   T #1,K
OA 310 IF K=89 THEN NB=NB+10:CLOSE #1:GOT
   O 280
BL 320 IF K=78 THEN CLOSE #1:GOTO 280
ER 330 CLOSE #1:GOTO 290
BC 340 REM  GUESS 
OM 350 GOSUB 140:POSITION 2,15:? "Player
   ";PL+1;" it's your turn.":FOR I=1 TO 2
   :SOUND 3,10,2,5:FOR Z=1 TO 20:NEXT Z
KL 360 SOUND 3,0,0,0:FOR Z=1 TO 20:NEXT Z
   :NEXT I:GOSUB 150:T=1
LY 370 IF PL THEN X=28:Y=3:GOTO 390
AU 380 X=9:Y=3
AP 390 GOSUB 1160:C$="     ":C$(1,1)=CHR$
   (ASC(A$(1,1))+128):D$(1,1)=" ":D$(2,5)
   =A$(2,5):GOSUB 140:GOSUB 130
AL 400 POSITION 2,19:? "Player ";PL+1;" -
   TURN No.";T
LR 410 Z=1:FOR I=X TO X+8 STEP 2:POSITION
   I,Y:? C$(Z,Z):Z=Z+1:NEXT I
NH 420 FOR I=1 TO 3:POSITION 2,21:? "█":F
   OR Z=1 TO 10:SOUND 0,150,10,2:NEXT Z:S
   OUND 0,0,0,0:FOR Z=1 TO 10:NEXT Z
DX 430 POSITION 2,21:? " ":FOR Z=1 TO 10:
   SOUND 0,190,10,2:NEXT Z:SOUND 0,0,0,0:
   FOR Z=1 TO 10:NEXT Z:NEXT I
PM 440 POKE 83,37:GOSUB 30:POSITION 2,20:
   ? :POSITION 2,21:POKE 764,255:INPUT #1
   6;B$:GOSUB 30:POKE 83,39
IF 450 IF LEN(B$)<>5 THEN POSITION 2,21:?
   "WRONG INPUT":GOSUB 60:GOSUB 150:POSI
   TION 2,21:? ER$(1,12):GOTO 420
QV 460 IF B$(1,1)<>A$(1,1) THEN POSITION
   2,21:? "WRONG INPUT":GOSUB 60:GOSUB 15
   0:POSITION 2,21:? ER$(1,12):GOTO 420
TN 470 POSITION 25,15:? ER$(1,1)
XQ 480 POSITION 2,15:? " TRANSPOSITION LE
   TTER: "
YN 490 Z=2:FOR I=X+2 TO X+8 STEP 2:POSITI
   ON I,Y:? B$(Z,Z):Z=Z+1:GOSUB 50:FOR W=
   1 TO 8:NEXT W:NEXT I:GOSUB 150
PK 500 IF B$(2,2)=A$(2,2) THEN POSITION X
   +2,Y:? CHR$(ASC(A$(2,2))+128):GOSUB 40
   :GOSUB 140:I=2:GOSUB 590
DA 510 IF B$(3,3)=A$(3,3) THEN POSITION X
   +4,Y:? CHR$(ASC(A$(3,3))+128):GOSUB 40
   :GOSUB 140:I=3:GOSUB 590
QQ 520 IF B$(4,4)=A$(4,4) THEN POSITION X
   +6,Y:? CHR$(ASC(A$(4,4))+128):GOSUB 40
   :GOSUB 140:I=4:GOSUB 590
EG 530 IF B$(5,5)=A$(5,5) THEN POSITION X
   +8,Y:? CHR$(ASC(A$(5,5))+128):GOSUB 40
   :GOSUB 140:I=5:GOSUB 590
UP 540 IF B$=A$ THEN GOSUB 150:TR$="":GOT
   O 760
TD 550 GOSUB 600
TD 560 T=T+1:IF T>5 THEN TR$="":GOTO 630
EC 570 POSITION 25,15:? TR$:TR$=""
PP 580 Y=Y+2:POSITION 2,21:? " WRONG !!! "
   :GOSUB 60:GOSUB 150:POSITION 2,21:? ER
   $:GOTO 400
VK 590 C$(I,I)=CHR$(ASC(A$(I,I))+128):D$(
   I,I)=" ":RETURN
YA 600 FOR U=2 TO 5:FOR Z=5 TO 2 STEP -1:
   IF B$(U,U)=D$(Z,Z) THEN TR$=B$(U,U)
OC 610 NEXT Z:NEXT U:RETURN
DZ 620 REM  NOT GUESSED 
FT 630 POSITION 2,21:? " NOT FOUND !!! ":G
   OSUB 60:GOSUB 140:GOSUB 60:GOSUB 150
AJ 640 POSITION 2,21:? ER$(1,15):POSITION
   2,21:? "  PENALTY = -10 POINTS !! "
OS 650 FOR I=250 TO 220 STEP -1:SOUND 3,I
   ,10,15:NEXT I:SOUND 3,0,0,0:GOSUB 150
WF 660 IF PL THEN 690
PQ 670 SC1=SC1-10:IF SC1<0 THEN SC1=0
MD 680 POSITION 3,8:? SC1;" ":GOSUB 160:G
   OTO 710
SN 690 SC2=SC2-10:IF SC2<0 THEN SC2=0
BA 700 POSITION 22,8:? SC2;" ":GOSUB 160
VK 710 GOSUB 130:IF PL THEN GOSUB 80:GOTO
   730
VK 720 GOSUB 70
SA 730 GOSUB 90:FOR I=1 TO LEN(A$):A$(I,I
   )=CHR$(ASC(A$(I,I))-5):NEXT I:WORD$(LE
   N(WORD$)+1)=A$:F=F+1
CB 740 GOSUB 150:GOSUB 140:GOTO 350
VF 750 REM  FOUND 
UB 760 POSITION 2,21:? ER$:CH=INT(RND(0)*
   9)+1:ON CH GOTO 770,780,790,800,810,82
   0,830,840,850
CO 770 POSITION 2,21:? " LUCKY ! ":GOTO 86
   0
OQ 780 POSITION 2,21:? " CONGRATULATIONS.
   █":GOTO 860
AQ 790 POSITION 2,21:? " VERY GOOD. ":GOT
   O 860
YO 800 POSITION 2,21:? " DID YOU FOUND TH
   AT ? ":GOTO 860
EN 810 POSITION 2,21:? " NICE ... ":GOTO
   860
HG 820 POSITION 2,21:? " WHEW !! ":GOTO 8
   60
KF 830 POSITION 2,21:? " GUESSER ! ":GOTO
   860
WR 840 POSITION 2,21:? " CANNOT BELIEVE T
   HIS .. ":GOTO 860
EG 850 POSITION 2,21:? " AT LAST. "
VB 860 FOR I=250 TO 0 STEP -10:SOUND 0,I,
   14,15:NEXT I:SOUND 0,0,0,0:GOSUB 150
XP 870 IF PL THEN 890
NO 880 GOSUB 70:GOTO 900
WK 890 GOSUB 80
CE 900 GOSUB 130:GOSUB 140:GOTO 180
IB 910 REM  SCORE UPDATE 
NC 920 IF PL THEN X=22:SC=SC2:GOTO 940
XR 930 X=3:SC=SC1
US 940 SC=SC+NB:POSITION X,8:? SC;" ":GOS
   UB 160
```

continued ☛

GUESS and COUNT

```
XV 950 IF SC>77 THEN OS=SC-77:SC=77-OS-10
   :POSITION 2,20:? " EXCEEDING 77 !!! ":
   GOSUB 60:GOSUB 140:GOTO 970
SM 960 GOTO 980
EU 970 GOSUB 150:GOSUB 130:POSITION X,8:?
   SC;" ":GOSUB 160:GOSUB 140:NB=0:GOTO
   990
NE 980 IF SC=77 THEN POP :GOTO 1030
XJ 990 IF PL THEN 1010
DQ 1000 SC1=SC:RETURN
EB 1010 SC2=SC:RETURN
OG 1020 REM  WINNER !
DE 1030 IF PL THEN GOSUB 80:X=22:GOTO 105
   0
UY 1040 GOSUB 70:X=3
AU 1050 GOSUB 130:GOSUB 140:PL$=STR$(PL+1
   ):PL$=CHR$(ASC(PL$)+128)
PN 1060 FOR I=1 TO 5:POSITION X,8:? "77":
   FOR Z=1 TO 8:SOUND 0,150,14,15:NEXT Z:
   SOUND 0,0,0,0:FOR Z=1 TO 8:NEXT Z
IB 1070 POSITION X,8:? "77":FOR Z=1 TO 8:
   SOUND 0,190,14,15:NEXT Z:SOUND 0,0,0,0
   :FOR Z=1 TO 8:NEXT Z:NEXT I
FK 1080 POSITION 2,16:? " PLAYER ";PL$;"
   IS THE WINNER ! ":GOSUB 150
LR 1090 FOR I=1 TO 4:SOUND I-1,I*50,10,15
   :FOR Z=1 TO 95:NEXT Z:NEXT I:FOR Z=1 T
   O 120:NEXT Z
YW 1100 FOR I=0 TO 3:SOUND I,0,0,0:NEXT I
OZ 1110 GOSUB 140:POSITION 2,20:? "PLAY A
   GAIN ... (Y/N)":POKE 764,255:OPEN #1,4
   ,0,"K:":GET #1,K
ZK 1120 IF K=89 THEN GOSUB 90:GOSUB 140:G
   OSUB 130:CLOSE #1:SC1=0:SC2=0:POSITION
   3,8:? SC1;" ":GOSUB 160:GOTO 1140
PZ 1130 CLOSE #1:POKE 82,2:CLR :GRAPHICS
   0:END
IH 1140 GOSUB 140:POSITION 22,8:? SC2;" "
   :GOSUB 160:GOTO 350
MI 1150 REM  SELECT WORD
QB 1160 IF COUNT=1 THEN POKE 709,12:POKE
   710,0:POKE 712,200
KZ 1170 IF COUNT=11 THEN POKE 709,2:POKE
   710,12:POKE 712,4
IO 1180 IF COUNT=21 THEN POKE 710,96:POKE
   712,74:POKE 709,202
MN 1190 IF COUNT=31 THEN COUNT=0
FT 1200 COUNT=COUNT+1
AB 1210 IF LEN(WORD$)=5 THEN A$=WORD$:WOR
   D$="":FOR I=1 TO LEN(A$):A$(I,I)=CHR$(
   ASC(A$(I,I))+5):NEXT I:RETURN
GN 1220 IF WORD$="" THEN WORD$=W$:F=405
XA 1230 W=INT(RND(0)*F)
LP 1240 PC=W*5+1
KZ 1250 A$=WORD$(PC,PC+4):FOR I=1 TO LEN(
   A$):A$(I,I)=CHR$(ASC(A$(I,I))+5):NEXT
   I
SS 1260 IF PC=1 THEN WORD$=WORD$(PC+5,LEN
   (WORD$)):F=F-1:RETURN
RC 1270 IF W=F-1 THEN WORD$=WORD$(1,PC-1)
   :F=F-1:RETURN
QZ 1280 TMP$=WORD$(PC+5,LEN(WORD$))
RZ 1290 WORD$=WORD$(1,PC-1)
FK 1300 WORD$(LEN(WORD$)+1)=TMP$
QE 1310 F=F-1:RETURN
CS 1320 REM  PLAYFIELD
YZ 1330 GRAPHICS 0:POKE 16,64:POKE 53774,
   64:GOSUB 30:POKE 710,0:POKE 712,200:PO
   KE 709,12
RH 1340 POSITION 1,14:? "┌──────────────
   ──────────────────┐"
YF 1350 FOR I=15 TO 21:POSITION 1,I:? "|"
   :NEXT I:FOR I=15 TO 21:POSITION 38,I:?
   "|":NEXT I
DV 1360 POSITION 1,18:? "├──────────────
   ──────────────────┤"
UG 1370 POSITION 1,22:? "└──────────────
   ──────────────────┘"
HJ 1380 POSITION 1,1:? "┌───────────────
   ──┬───────────────┐"
HI 1390 POSITION 1,13:? "└──────────────
   ──┴───────────────┘":FOR I=2 TO 12:
   POSITION 1,I:? "|":NEXT I
FN 1400 FOR I=2 TO 12:POSITION 20,I:? "|"
   :NEXT I:FOR I=2 TO 12:POSITION 38,I:?
   "|":NEXT I
NR 1410 POSITION 2,3:? "PLAYER":POSITION
   21,3:? "PLAYER":POSITION 4,5:? "1":POS
   ITION 23,5:? "2"
VW 1420 I=2
NV 1430 POSITION I,7:? "┌───┐":POSITION I
   ,8:? "|   |":POSITION I,9:? "└───┘":IF
   I=21 THEN I=8:GOTO 1450
BK 1440 I=21:GOTO 1430
FA 1450 POSITION I,2:? "┌┬┬┬┬┐":POSI
   TION I,3:? "| | | | | |":POSITION I,4:
   ? "├┼┼┼┼┤"
HW 1460 POSITION I,5:? "| | | | | |":POSI
   TION I,6:? "├┼┼┼┼┤":POSITION I,7:
   ? "| | | | | |"
FD 1470 POSITION I,8:? "├┼┼┼┼┤":POSI
   TION I,9:? "| | | | | |":POSITION I,10
   :? "├┼┼┼┼┤"
SS 1480 POSITION I,11:? "| | | | | |":POS
   ITION I,12:? "└┴┴┴┴┘":IF I=27 THE
   N 1500
FL 1490 I=27:GOTO 1450
PY 1500 POSITION 3,8:? SC1:POSITION 22,8:
   ? SC2:GOTO 350
PK 1510 REM  TITLE
OA 1520 DIM GS$(4),CT$(5):GS$="uess":CT$=
   "count":GRAPHICS 2:GOSUB 30:POSITION 3
   ,1:? #6;"???????????":POSITION 3,2
FA 1530 ? #6;"? - - - - ?":POSITION 3,3:?
   #6;"???????????":POSITION 3,5:? #6;"+
   ++++++++++":POSITION 3,6
DQ 1540 ? #6;"+ - - - - +":POSITION 3,7:?
   #6;"+++++++++++":GOSUB 150:POSITION 4
   ,2:? #6;"G":GOSUB 150
SD 1550 X=1:FOR I=6 TO 12 STEP 2:POSITION
   I,2
KX 1560 ? #6;GS$(X,X);:GOSUB 1600:X=X+1:N
   EXT I:GOSUB 140:POSITION 14,4:? #6;"an
   d":GOSUB 140
XQ 1570 GOSUB 150:X=1:FOR I=4 TO 12 STEP
   2
DR 1580 POSITION I,6:? #6;CT$(X,X);:GOSUB
   1600:X=X+1:NEXT I:GOSUB 150
KK 1590 ? :? "by ROBERT DE LETTER":? :? "
   INITIALISING ... ";:GOTO 16
   20
VQ 1600 SOUND 0,100,10,15:FOR Z=1 TO 8:NE
   XT Z:SOUND 0,0,0,0:FOR Z=1 TO 8:NEXT Z
   :RETURN
FI 1610 REM  INITIALIZING
CB 1620 DIM WORD$(2025),W$(2025),TMP$(202
   5),ER$(35),A$(5),B$(7),C$(5),D$(5),PL$
   (1),TR$(1)
SI 1630 ER$(1)=" ":ER$(35)=" ":ER$(2)=ER$
   :PL=0:F=405:SC1=0:SC2=0:COUNT=0
ZA 1640 FOR I=1 TO 405:READ A$:WORD$(LEN(
   WORD$)+1)=A$:NEXT I:W$=WORD$
QM 1650 GOTO 1330
IC 1660 DATA =<ND>,KMDIO,NJPI?,>JGJM,>GJN
   @,BMJPK,RCDO@,JM?@M,GJ><G,RMDO@,OJID>,
   BCJNO,<GJI@,=JIPN,KMD>@
IV 1670 DATA =PDG?,HJIOC,PNP<G,DIKPO,BM@@
   I,@Q@MT,KCJI@,RCDG@,RCD>C,NJMMT,NO<MO,
   ADMNO,MK<>@,RJMG?,<GDQ@
TE 1680 DATA NDI>@,NODGG,JOC@M,R@DM?,=M<I
   ?,<AO@M,>CDKN,@DBCO,K<?M@,=G<>F,NK@@?,
   RJM?N,KM@NN,KJDIO,G<=@G
ER 1690 DATA =J<M?,<MMJR,G<MB@,DH<B@,@IO@
   M,H<EJM,<B<DI,CJPN@,=@GJR,M@<?T,<C@<?,
   MDBCO,C@<MO,KG<>@,NFDGG
DP 1700 DATA <K<MO,B<H@N,OCJN@,=M@<F,KMJP
   ?,<=JPO,RJMOC,HJI@T,NOJM@,Q<GP@,N@Q@I,
   PI?@M,OC@DM,@IEJT,RMJIB
IZ 1710 DATA NJPOC,IJMOC,KJR@M,K<K@M,>C<D
   I,@SOM<,=GJ>F,HJPN@,BP<M?,>MDH@,<KKG@,
   QJD>@,PIODG,@I@HT,NPK@M
JV 1720 DATA @<MOC,<G@MO,NK@GG,NJGD?,BPD?
   @,NCJMO,DNNP@,OCM@@,G@<NO,G@B<G,Q<GD?,
   N>JM@,RJMMT,AMJIO,OCDIB
IP 1730 DATA I@Q@M,G@Q@G,M<IB@,M<I>C,NR<H
   K,OM<DI,AJM>@,KD@>@,@HKOT,<GGJR,CPH<I,
   =@BDI,><PN@,OCDM?,N@@HN
ZY 1740 DATA <MM<T,>JPIO,BM@<O,DI?@S,HJR@
   M,DO@HN,HJQD@,OCDIF,LP@NO,NCJ>F,I@RGT,
   <MH@?,NCJJO,><N@,CJPMN
ZY 1750 DATA M@A@M,><=G@,BP@NN,EP?B@,EPH=
   J,FDOOT,FIJ>F,OMD<G,<G=PH,<GD<N,<GD@I,
   <GG@T,<HDOT,<H@I?,<GJIB
OU 1760 DATA <IBMT,<OOD>,<QJD?,=<>JI,=<IE
   J,=<MJI,=@<M?,=@<NO,=DMOC,=D=G@,=G<NO,
```

DISK BONUS

A double disk bonus this issue from Dr C. J. Churcher-Brown - an arcade adventure and an updated version of one of our classic disk bonuses

DR WHO ADVENTURE

DR WHO or DR YOU? Who knows who is who these days and after so many regenerations YOU probably are WHO! But whoever, whatever and whenever DALEKS always mean trouble and that evil Time Lord, THE MASTER is most definitely enemy number one. He has lured you to the planet ZOG and has been lying in wait. Within seconds of your coming to this doomed planet, the Master has stolen your Time Drive Unit and immobilised your Tardis. You must now find it and get back.

Simple ... or it would be were the Daleks, Spooks and the High Priest of Zog not also out to get you ... and if the planet were not about to self destruct in one hour (local time). Luckily you always carry a few tools and a number of other articles are hidden about the place ... if only you can work out how they work and what they do.

Can you get your Tardis repaired in time and escape the planet ... or will the Master or the Daleks become the unopposed rulers of the universe?

DR WHO ADVENTURE comes on the Issue 44 disk complete with scenario and a solution for those who really are stuck.

MATCHPLAY GOLF

Also on this issue's disk is an update to Professional Golf (bonus on Issue Disk 39) to allow matchplay plus THREE NEW COURSES.

On the original game you had to wait for all the other players in the tournament to complete their rounds before you could play your next round but now there is a Matchplay option which can be played over 1 or more rounds. This means that a result can be achieved before darkness descends!

There is also an amendment to add a variable but predictable wind effect and some courses have been amended to include water hazards. There is also now no need for keyboard input, just press the joystick trigger whenever you need to progress through the game.

GUESS and COUNT

```
   =GDI?,K@MDG,=GJJ?,=GPNC
LO 1770 DATA =J5@M,=M<F@,=M<NN,=M@<?,=MD?
   @,=MD@A,=MDNF,=MPNC,=MJRI,=PBBT,=PI>C,
   A<I>T,A<O<G,A@I>@,AD@G?
RS 1780 DATA ADBCO,ADAOT,ADI<G,AG<F@,AG<N
   C,AGDIO,AGJJ?,AGJJM,AJMOT,AM<H@,AM@<F,
   AM@NC,AMD<M,?MDIF,AMJNO
YL 1790 DATA BGJMT,BGJQ@,BIJH@,BM<>@,BJMB
   @,BJJN@,BM<NN,BM<DI,BMDGG,BMJQ@,H<BD>,
   M<DIT,H<O>C,H@O<G,H@M>T
SQ 1800 DATA HDIJM,HJJN@,HJPOC,NTMPK,NR@@
   O,NR@<O,O<=G@,NH<GG,OCPH=,OJ<NO,ODOG@,
   OJJOC,OMPIF,QDMPN,R<O>C
VY 1810 DATA R<NO@,RC@@G,RD?JR,RJMN@,NC<M
   F,KJM>C,NHDG@,NKD>T,?JU@I,?M@<H,MJBP@,
   MCTH@,MDQ@M,KMDH@,KMDJM
CO 1820 DATA KMDU@,KMJKN,KMJRG,KMJST,KPAA
   T,KPMB@,KPMN@,KTBHT,TJPIB,TD@G?,TJPMN,
   TJPOC,T@<MI,T<>CO,RMDNO
SM 1830 DATA ?PNOT,>JQ@M,KG<O@,NKJJG,@IOM
   T,>G@<M,M<KD?,G<KN@,G<NNJ,G<O@S,G@<MI,
   G@<N@,G@<Q@,G@@>C,G@HJI
GJ 1840 DATA G@Q@M,GD=@G,GDBCO,GDHDO,GDI@
   M,GDIBJ,GDQ@M,GJ<HT,GJJN@,GJR@M,GJT<G,
   GJPN@,GJPNT,GJN@M,GJMMT
XZ 1850 DATA GPHKT,GPI<M,GTMD>,><==T,><=D
   I,M@GD>,><?@O,><I<G,><I?T,><IJ@,><MJG,
   ><MBJ,><MO@,><O>C,>@?<M
CS 1860 DATA >C<JN,>C@<K,>CD@A,>C@NN,>C@@
   F,>CDGG,>C@NO,>CDI<,>CJDM,>CPO@,>DB<M,
   >DQDG,>G<DH,>G<NN,>G@<I
SZ 1870 DATA >GD>F,>GJ<F,>GJ>F,>GJOC,>GJP
   ?,>GJRI,>J<>C,>J<NO,>JH@O,>JPMO,RM<>F,
   >M<UT,>M@<H,>MJJF,>MJNN
LV 1880 DATA >MJR?,>MJRI,>MTKO,>P=D>,>PMM
   T,PGOM<,PIA@?,PIDAT,PN<B@,C<=DO,C<U@G,
   C@<QT,CJMN@,CJO@G,CPHD?
```

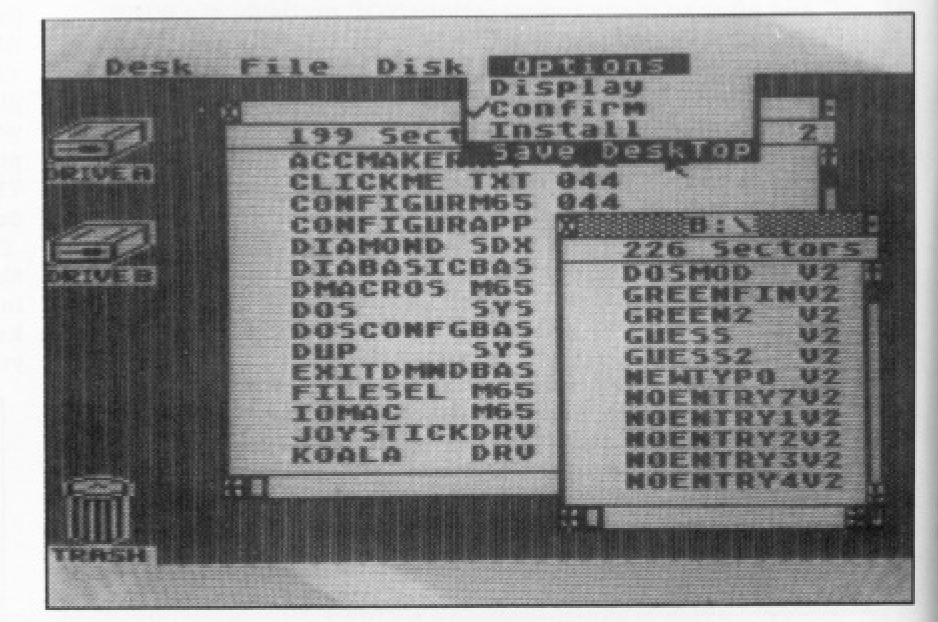
```
ML 1890 DATA CT?M<,CPMMT,I<NOT,I@MO@,ID@>
   @,IJ=G@,IJDN@,IJQ@G,J<F@I,J>>PM,J?JPM,
   JAO@I,JK@M<,JKOD>,JMB<I
DH 1900 DATA N@MPH,OJO@H,OMD>F,?MDQ@,K@<M
   G,K@IIT,KDGJO,KDO>C,KG<D?,KG<I@,KGPH=,
   KJPI?,M<DN@,KMD?@,N><G@
KF 1910 DATA KJF@M,K<I@G,K<ID>,K<MOT,K<O>
   C,K@<>@,K<T@@,K@<>C,KMJJA,LP<DG,LP<F@,
   LP<MO,LP@@I,LP@MT,M<>@M
HQ 1920 DATA M<?<M,M<?DJ,M<GGT,K<NO@,M<UJ
   M,M@B<G,M@G<T,M@I@R,M@N@O,MJ<NO,MJ=JO,
   MJPBC,MJOJM,MJPI?,N<P>@
```

```
WX 10000 CLR :? CHR$(125):POKE 752,1:? :?
     :? "Print to SCREEN and PRINTER Y/N
   ":POKE 764,255
WA 10002 CLOSE #1:OPEN #1,4,0,"K:":GET #1
   ,K:IF K<>89 THEN 10005
XQ 10003 ? :? :? "SET PRINTER ON LINE ...
    Press a key.":POKE 764,255:TRAP 10000
   :GET #1,K
TJ 10004 CLOSE #2:OPEN #2,8,0,"P:":PR=1
KM 10005 CLOSE #1:DIM A$(5):RESTORE :? CH
   R$(125)
QX 10006 FOR A=1 TO 405:READ A$:FOR B=1 T
   O 5:A$(B,B)=CHR$(ASC(A$(B,B))+5):NEXT
   B:? A$;"-";
PI 10007 IF PR THEN ? #2;A$;"-";
DF 10008 NEXT A
YN 10009 CLOSE #2:TRAP 40000:POKE 752,0:C
   LR :END
```

Listing 2

A LITTLE GEM!

Can your XL/XE possibly look like an ST? Diamond GOS seems to have all it takes to make it so



Have you ever wished your Atari 8-bit machine could have an easy to use graphical front end to its operating system like GEM on the ST? If so, your wish has been granted by Reeve Software, who have come up with a complete 8-bit WIMP system called the Diamond Graphical Operating System, now sold in the UK by Frontier Software.

For the uninitiated, WIMP stands for "Windows, Icons, Menus, and Pointer", four essential ingredients in today's user friendly operating environments. Its purpose is to simplify the operation of the computer by providing an easy-to-use, intuitive way for the user to interact with it.

In a good WIMP system there's little or no need to touch the keyboard for controlling the computer, as everything can be handled via selections using the Pointer, which is really just a mouse operated cursor. There's no need to remember Operating System commands, which makes the computer easier and quicker to use.

This concept can be extended to programs written to run under the WIMP system too, as there are usually programming interfaces provided to allow the programmer to use the WIMP facilities for controlling his own programs. The keyboard may then be reserved just for real application work, such as keying text into a word processor or data into a database.

SUPERCARTRIDGE

The package contains a bank switched 'supercartridge', a disk of utility programs, a user's manual, and a programmer's manual. The cartridge is of the 'piggy-back' type, i.e. it duplicates the computer's cartridge port connections, so when it's plugged in a second cartridge may be plugged in behind it - AtariWriter for instance.

The disk contains Atari DOS 2.0 plus a host of assorted drivers, sample programs, programming utilities, and other bits and pieces needed to install the system. The two manuals are rather slim and have no contents page, index, or even page numbers! However, Diamond is largely intuitive in use (that's the whole idea behind it, after all) so you don't need much in the way of instructions once it's up and running.

The installation process is needed as Diamond is designed to operate with several different operating systems, memory configurations, and pointing devices. You can use any flavour of Atari DOS 2, or DOS XE, or SpartaDOS, and your first job is to build a start-up disk in the appropriate format containing your chosen operating system, configuration details, and the Diamond utilities.

After bootup you're presented with Diamond's DeskTop, which looks remarkably like the ST's! It has a menu bar across the top, disk drive icons on the left, and a 'trash can' icon at the bottom of the screen. These can be repositioned where you like by dragging them with the Pointer, and your customised DeskTop can be saved to your startup disk so it always boots up that way.

There's a Pointer on the screen, but how do you move it without a mouse? Well, you can configure the system to use the cursor keys on the keyboard (but no dragging allowed with these), a joystick, an Atari Touch Tablet, a Koala Pad, or best of all an ST mouse plugged into a joystick port! Strangely, the touch tablet seemed to work upside down, but it was no problem to just turn it over to use.

16 MEGABYTE MEMORY!

The other configurable item is the memory support. This is one of the most powerful aspects of Diamond, as it's been designed to handle up to 16 megabytes of memory via a set of memory drivers! Even so, it will still run on a 48K machine if required. There's flexibility for you!

One of the uses of that enormous memory is for desk accessories. For the uninitiated, a desk accessory is a program which loads into memory at bootup and remains there, even when you're running other programs. You can use it at any time, even while another program is loaded - providing that program was written to Diamond standards, of course. Desk accessories tend to be useful little utilities such as calculators, clocks, calendars, notepads, and such like. Diamond allows up to six desk accessories to be loaded at once, although it obviously depends on how much memory your machine's got as to how many will actually fit. It's rather tight on a 48K machine, as there's just 1K available for such programs! To prove it works there's a sample accessory provided - this allows you to reboot the whole machine from the DeskTop without turning the power off and on.

These wonderful features are all very well, but where's the software to use them? That, unfortunately, is the main stumbling block of all systems such as this. If Diamond had been available early in the life of the 8-bit machine I'm sure lots of companies would have written software specially for it. Reeve themselves are planning a series of products, the first of which (Diamond Paint) should be available by the time you read this.

Reeve are also hoping that other software developers will pick up the challenge and write applications using Diamond. To assist with this they've included a 'programmer's toolkit' in the package. This includes the programmer's manual mentioned earlier, plus a collection of MAC/65 Assembler macros and other assorted source code to help the programmer get started. There's also a utility for adding a run address to an executable file so it can be run directly from the DeskTop. There's help in producing desk accessory programs too, in the form of a utility which turns MAC/65 object code into a desk accessory.

It's not strictly necessary to write Diamond applications using an Assembler such as MAC/65. You can use any language with the ability to store numbers into specific memory locations - and that apparently even includes Atari BASIC with its POKE command. The disk contains an example of BASIC code which uses the Diamond facilities.

DIAMOND IN USE

Diamond seemed pleasant and reliable enough in use, and I was amazed to find that most of GEM's desk top functions are there. You can click, double click, and drag things with the mouse, allowing you to list disk directories; copy, rename, lock, unlock, or delete files; copy or format disks; and load binary programs. File folders (subdirectories) may also be used if the operating system used also supports them (e.g. SpartaDOS). Up to two windows can be opened, resized, fully expanded, repositioned; window contents can be displayed as icons or text, and sorted by name, extender, or size. Dialogue boxes and buttons are also supported.

It isn't an exact clone of GEM though, as many of GEM's flashier features are missing. For instance, the windows don't 'explode' or 'implode' from/to the disk icons; there are no 'thermometer style' progress indicators when copying or formatting disks; and the scroll bars in the windows don't indicate (by their size) how much of the window contents you're actually viewing.

SOFTWARE COMPATIBILITY

Reeve have tried to make Diamond as compatible as possible with existing software, so it can be run from the DeskTop. To check this out I briefly tested a few of my 8-bit programs on it, with very mixed results.

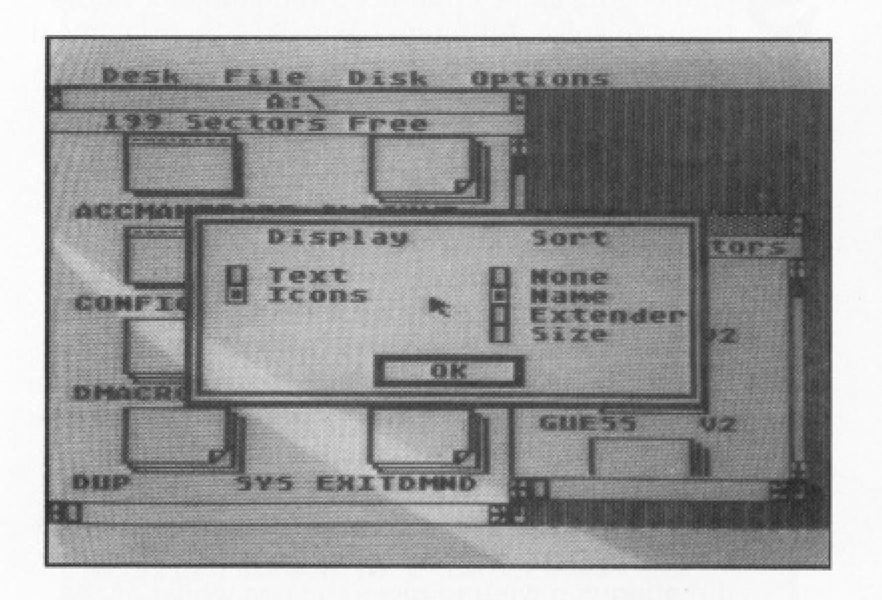
My AtariWriter cartridge ran fine plugged into the back of the Diamond cartridge, but AtariWriter Plus just locked up and wouldn't run. ANTIC's Creative Process kept saying "remove cartridge" and wouldn't run, but their Word Magic word processor seemed OK. MINI Office II seemed OK, but the XLent Word Processor produced a garbage display and locked up. Music Construction Set ran, but the music didn't play smoothly and the scrolling graphics display was corrupted. Advanced Music System II played OK, but its animated piano keyboard graphics were completely messed up. The Page 6 PD and Issue Disks for some reason upset the DeskTop graphics when opened, and some programs would run while others wouldn't. The PD program Composer's Jukebox worked fine - even its animated display, which is identical to that in Advanced Music System! *(The problem with the Page 6 disk is almost certainly that they use 'illegal' characters in the directory. Ed.)*

Obviously, it depends very much on how the programs were coded. Problems can be caused by programs loading their own code over memory used by Diamond; by assuming the screen is in Graphics Mode 0 by default (which it isn't any more!); or by assuming certain areas of memory always contain binary zeros (which may not be true any more either!). Reeve intend to make 'fixes' available for problems with popular software once they've been identified, and hopefully these will be available via Frontier in the UK.

MINOR MIRACLE

Reeve have pulled off a minor miracle in implementing such a system in a usable form on the 8-bit machine. Unfortunately its full benefits can't be realised until Reeve or others start producing proper WIMP based applications. In its present state it just makes DOS easier to use, as those programs that will run can't themselves make use of its WIMP facilities - they just run as they would normally.

Committed 8-bit users, particularly the programmers amongst us, will love it though, and will have a whale of a time writing their own WIMP based applications and desk accessories. They'll probably want to use it with a different operating system too, and an Atari 8-bit running Diamond with ICD's superb SpartaDOS X (also available from Frontier) is now surely the most potent 8-bit home computer system on this planet. Every 8-bit fanatic will probably want this product, as like me (warning - terrible pun approaching), they'll think Diamond is a little gem!



Review by

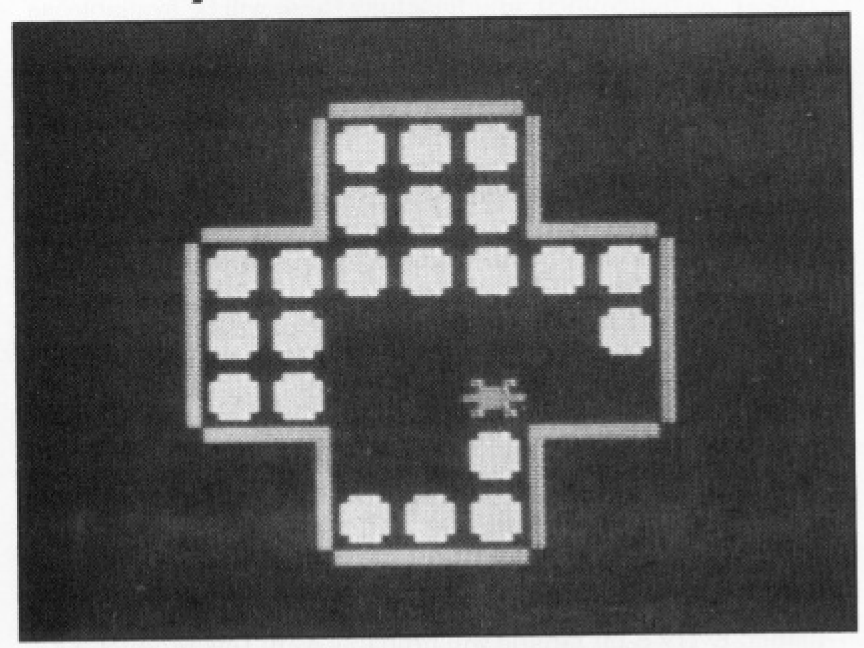
John S Davison

Product:	**DIAMOND GOS**
Publisher:	**Reeve Software**
UK Distributer:	**Frontier Software**
Price:	**£49.99**

Frontier Software can be contacted at P.O. Box 113, Harrogate, North Yorkshire, HG2 0BE. Telephone 0423 567140

SOLITAIRE

by Matthew Green



Solitaire is one of those very simple yet extremely challenging games that keep you going for hours trying to solve. Although basically a board game it is an ideal game to play on the computer and this version by Matthew green will keep you amused.

The board game is played on a board with holes and pegs and every hole on the board, with exception of the centre hole, is filled. The object is simply to remove all of the pegs, leaving just one in the previously empty centre hole. Pegs are removed by being jumped over by another peg which can be done in any direction provided there is an empty space beyond. In this version you use a joystick to indicate which peg you wish to move and the direction to move it. To select you peg, move the cursor to the desired location and press the fire button. Next move the joystick in the direction you wish to move the peg whilst at the same time pressing the fire button again. The peg you have jumped will automatically be removed. The game ends when you have only one peg left or you can no longer make a valid move. If you find that there are no valid moves left, the OPTION key will abort the current game and the START key will begin a new game.

Matthew Green is 11 years old and has had his Atari and 1050 disk drive for about 3 years.

```
WO 1 REM ******************************
EO 2 REM *          SOLITAIRE          *
RT 3 REM *             by              *
ER 4 REM *        Matthew Green        *
SR 5 REM * --------------------------- *
CV 6 REM * NEW ATARI USER - June 1990 *
WU 7 REM ******************************
NN 8 REM
KQ 90 GRAPHICS 2:? #6;"INITIALISING....":
   ? #6;"please wait"
LW 100 REM    Redifine character set
DV 110 FOR I=0 TO 1023:J=PEEK(57344+I)
ZX 120 POKE 16384+I,J:NEXT I
BG 130 REM    Character Data
QJ 140 FOR N=0 TO 7
TT 150 READ A:POKE 16384+N+264,A:NEXT N
ND 160 DATA 0,60,126,126,126,126,60,0
QP 170 FOR N=0 TO 7
SY 171 READ A:POKE 16384+N+272,A:NEXT N
FB 172 DATA 0,0,0,0,0,0,0,0
QY 173 FOR N=0 TO 7
PI 174 READ A:POKE 16384+N+304,A:NEXT N
BI 175 DATA 255,255,0,0,0,0,0,0
RH 176 FOR N=0 TO 7
OP 177 READ A:POKE 16384+N+312,A:NEXT N
QL 178 DATA 0,0,0,0,0,0,255,255
RQ 179 FOR N=0 TO 7
MU 180 READ A:POKE 16384+N+320,A:NEXT N
JA 181 DATA 192,192,192,192,192,192,192,1
   92
QX 182 FOR N=0 TO 7
VL 183 READ A:POKE 16384+N+328,A:NEXT N
VB 184 DATA 3,3,3,3,3,3,3,3
VN 185 FOR N=0 TO 7:READ A:POKE 16384+352
   +N,A:NEXT N:DATA 3,3,3,3,3,3,255,255
ZV 186 FOR N=0 TO 7:READ A:POKE 16384+360
   +N,A:NEXT N:DATA 192,192,192,192,192,1
   92,255,255
WS 187 FOR N=0 TO 7:READ A:POKE 16384+368
   +N,A:NEXT N:DATA 255,255,3,3,3,3,3,3
KG 188 FOR N=0 TO 7:READ A:POKE 16384+376
   +N,A:NEXT N:DATA 255,255,192,192,192,1
   92,192,192
MN 199 GOTO 5000
OW 200 REM    MAIN PROGRAM
BB 201 GRAPHICS 18:SETCOLOR 0,13,10:SETCO
   LOR 3,5,4
SJ 205 POKE 756,64
GO 210 POSITION 0,1
FI 215 ? #6;"        GGG        "
GT 220 ? #6;"       IAAAH       "
KB 230 ? #6;"      GLAAAMG      "
EJ 240 ? #6;"     IAAAAAAAH     "
FF 250 ? #6;"     IAAABAAAH     "
EN 260 ? #6;"     IAAAAAAAH     "
LX 270 ? #6;"      FNAAAOF      "
HF 280 ? #6;"       IAAAH       "
DB 290 ? #6;"        FFF        "
XR 300 X=10:Y=5
```

continued

```
HT 310 S=STICK(0)
YP 320 IF S=11 THEN X=X-1
DW 330 IF S=7 THEN X=X+1
JT 335 IF PEEK(53279)=3 THEN GOTO 5000
BM 340 IF S=14 THEN Y=Y-1
ZN 350 IF S=13 THEN Y=Y+1
LK 360 IF X<6 THEN X=6
NC 370 IF X>13 THEN X=13
IB 380 IF Y<2 THEN Y=2
QM 389 IF Y>8 THEN Y=8
PN 390 IF Y>8 THEN Y=8
IZ 400 IF PEEK(53279)=3 THEN GOTO 5000
YG 405 LOCATE X,Y,SD
AI 410 POSITION X,Y:? #6;"▼"
FF 420 FOR T=1 TO 50:NEXT T
SZ 430 POSITION X,Y:? #6;CHR$(SD)
JU 435 IF PEEK(53279)=3 THEN GOTO 5000
CF 440 IF STRIG(0)=0 THEN GOTO 500
MY 450 GOTO 310
XS 500 LOCATE X,Y,SD
MZ 510 IF SD<>65 THEN GOTO 1000
FT 515 FOR T=1 TO 50:NEXT T
KO 520 IF STRIG(0)=0 AND STICK(0)=7 THEN
   GOTO 600
WI 530 IF STRIG(0)=0 AND STICK(0)=11 THEN
   GOTO 700
BY 540 IF STRIG(0)=0 AND STICK(0)=14 THEN
   GOTO 800
CM 550 IF STRIG(0)=0 AND STICK(0)=13 THEN
   GOTO 900
BW 560 IF STRIG(0)=0 AND STICK(0)=15 THEN
   GOTO 1000
KI 570 S=STICK(0):IF STRIG(0)=0 AND S<>15
   AND S<>7 AND S<>11 AND S<>14 AND S<>1
   3 THEN GOTO 1000
OK 580 GOTO 520
ND 600 LOCATE X+1,Y,SD1:LOCATE X+2,Y,SD2
ZY 610 IF SD1<>65 OR SD2<>66 THEN GOTO 10
   00
GH 620 POSITION X+2,Y:? #6;"A"
GT 630 POSITION X+1,Y:? #6;"B"
ME 640 POSITION X,Y:? #6;"B"
RD 641 LOCATE 10,5,D
FX 642 A=6
SP 643 A=A+1:IF A=14 THEN GOTO 650
NF 644 IF A=10 THEN A=11
PV 645 FOR F=2 TO 8
BP 646 LOCATE A,F,C
QG 647 IF C=65 THEN GOTO 310
FY 648 NEXT F
RU 649 GOTO 643
EK 650 A=1
JD 651 A=A+1:IF A=9 THEN GOTO 660
PN 652 IF A=5 THEN A=6
XS 653 LOCATE 10,A,C
PZ 654 IF C=65 THEN GOTO 310
QX 655 GOTO 651
KC 660 IF D=65 THEN GOTO 2000
QM 700 LOCATE X-1,Y,SD1:LOCATE X-2,Y,SD2
ZZ 710 IF SD1<>65 OR SD2<>66 THEN GOTO 10
   00
HM 720 POSITION X-2,Y:? #6;"A"
HY 730 POSITION X-1,Y:? #6;"B"
MF 740 POSITION X,Y:? #6;"B"
RE 741 LOCATE 10,5,D
FY 742 A=6
SQ 743 A=A+1:IF A=14 THEN GOTO 650
NG 744 IF A=10 THEN A=11
PW 745 FOR F=2 TO 8
BQ 746 LOCATE A,F,C
QH 747 IF C=65 THEN GOTO 310
FZ 748 NEXT F
RV 749 GOTO 643
EL 750 A=1
JE 751 A=A+1:IF A=9 THEN GOTO 660
PO 752 IF A=5 THEN A=6
XT 753 LOCATE 10,A,C
QA 754 IF C=65 THEN GOTO 310
QY 755 GOTO 651
KD 760 IF D=65 THEN GOTO 2000
KP 800 LOCATE X,Y-1,SD1:LOCATE X,Y-2,SD2
AA 810 IF SD1<>65 OR SD2<>66 THEN GOTO 10
   00
EP 820 POSITION X,Y-2:? #6;"A"
EZ 830 POSITION X,Y-1:? #6;"B"
MG 840 POSITION X,Y:? #6;"B"
RF 841 LOCATE 10,5,D
FZ 842 A=6
SR 843 A=A+1:IF A=14 THEN GOTO 650
NH 844 IF A=10 THEN A=11
PX 845 FOR F=2 TO 8
BR 846 LOCATE A,F,C
QI 847 IF C=65 THEN GOTO 310
GA 848 NEXT F
RW 849 GOTO 643
EM 850 A=1
JF 851 A=A+1:IF A=9 THEN GOTO 660
PP 852 IF A=5 THEN A=6
XU 853 LOCATE 10,A,C
QB 854 IF C=65 THEN GOTO 310
QZ 855 GOTO 651
KE 860 IF D=65 THEN GOTO 2000
HA 900 LOCATE X,Y+1,SD1:LOCATE X,Y+2,SD2
AB 910 IF SD1<>65 OR SD2<>66 THEN GOTO 10
   00
DI 920 POSITION X,Y+2:? #6;"A"
DS 930 POSITION X,Y+1:? #6;"B"
MH 940 POSITION X,Y:? #6;"B"
RG 941 LOCATE 10,5,D
GA 942 A=6
SS 943 A=A+1:IF A=14 THEN GOTO 650
NI 944 IF A=10 THEN A=11
PY 945 FOR F=2 TO 8
BS 946 LOCATE A,F,C
QJ 947 IF C=65 THEN GOTO 310
GB 948 NEXT F
RX 949 GOTO 643
EN 950 A=1
JG 951 A=A+1:IF A=9 THEN GOTO 660
PQ 952 IF A=5 THEN A=6
XV 953 LOCATE 10,A,C
QC 954 IF C=65 THEN GOTO 310
RA 955 GOTO 651
KF 960 IF D=65 THEN GOTO 2000
TT 1000 SOUND 0,0,0,0:SOUND 1,0,0,0
TW 1010 SOUND 0,0,0,0:SOUND 1,0,0,0
PO 1020 SOUND 0,150,10,15:SOUND 1,165,10,
   15
KM 1030 FOR T=1 TO 100:NEXT T
NW 1040 SOUND 0,230,10,15:SOUND 1,245,10,
   15
OE 1050 FOR T=1 TO 150:NEXT T
UL 1060 SOUND 0,0,0,0:SOUND 1,0,0,0
OV 1070 GOTO 310
DZ 2000 A=240
EC 2010 A=240
LC 2020 A=A-40:IF A=80 THEN GOTO 5000
MV 2030 FOR B=A TO A-30 STEP -1
QC 2040 SOUND 0,B,10,15
CG 2050 NEXT B
OS 2060 GOTO 2020
JI 5000 GRAPHICS 17
DZ 5010 POKE 756,224
VT 5020 POSITION 2,2:? #6;"SUPER SOLITAIR
   E"
EH 5030 POSITION 2,3:? #6;"--------------
   -"
MS 5040 POSITION 2,5:? #6;"  PRESS START
   "
BG 5050 FOR A=0 TO 12
DU 5055 FOR B=0 TO 14
DM 5060 SETCOLOR 0,A,B
VF 5070 IF PEEK(53279)=6 THEN GOTO 200
DJ 5075 NEXT B
CH 5080 NEXT A
RY 5090 GOTO 5050
```

TRIVIAL PURSUIT
QUESTION DISK MAKER

When Domark released their computerised version of the Trivial Pursuit board game about three years ago, the game was supplied with a disk containing 3000 questions - the Genus edition. At the time Domark were said to be working on other editions of the game - Young Player, Baby Boomer, Genus II and so on, all of which are available for the original board game. Unfortunately these question disks never appeared. Also, due to the complex way the questions are stored on disk, it hasn't been possible to make your own question disks. Until now, that is. This program allows you to make up your own disks with any questions you like. It is now possible for someone to undertake the (huge) task of typing in all the questions for the other editions of the game. The only drawback of the program is that music questions and picture questions can't be written, but, of course, the original board game doesn't have them either.

PREPARING THE QUESTIONS

The program works by taking a text file containing all the questions and answers and compiling them into a block of data which is then written to the question disk. The text file can be made up using a word processor. The file should have the following format:

TEXT (SOURCE) FILE FORMAT

	Example
Number of Questions	3
Name of Category 1	Cinema
Question 1 in Category 1	Who starred in ... etc. [RETURN]
Answer	F.Bloggs [RETURN]
Question 2 in Category 1	When was ... etc. [RETURN]
Answer	1972 [RETURN]
Question 3 in Category 1	Was it ... etc. [RETURN]
Answer	Yes [RETURN]
Name of Category 2	Sport
Question 1 in Category 2	Who won ... etc. [RETURN]
Answer	It was ... etc. [RETURN]
etc.	etc.
Question 3 in Category 6	Why was ... etc. [RETURN]
Answer	Because ... etc. [RETURN]

by Chris Patterson

The total number of questions corresponds to the number of questions in each category, so in the example there would be a total of 6 x 3 = 18 questions. The program will compile files with 20 or more questions per category before running out of memory, but it is best to keep the number to between 12 and 15. This keeps each file at a reasonable size. It should also be noticed that each block can have completely different category names. This could add another dimension to the game - there can be many different sets of questions played during one game.

RUNNING THE PROGRAM

Before running the BASIC program, you should have a blank, formatted disk ready (use option I from DOS 2 menu or option P from DOS 2.5 to format a disk). After formatting, RUN the BASIC program. When prompted, type the filename of the text file you have created. The program will compile the questions into a more compact form. You will then have to insert the formatted disk onto which the question block will be saved. WARNING: Do NOT mix up your disks: if the question block is saved onto the wrong disk, that disk will be corrupted. Each time you compile a text file, the program will save the compiled data at the next available place on the disk.

SOME GUIDANCE

... You can only use the following characters in your questions/answers: A to Z, a to z, 0 to 9, colon, semi-colon, space, comma, quotation marks, apostrophe, percent, dash, full-stop.
... The program will signal an error if any other characters are used, e.g. parenthesis (round brackets).
... Maximum length of category name: 8 characters
... Maximum length of question or answer: 70 characters
... The file can be made more readable by inserting RETURNs between lines.
... If you are using Atariwriter plus, save the file using CNTRL-S.
... Category 1 is Brown (Art and Literature in GENUS edition), 2 is Blue (Science), 3 is Orange (Geography), 4 is Green (History), 5 is Grey (Sport and Leisure), 6 is Yellow (Entertainment)
... Press RETURN at filename entry stage to quit program (or press RESET at any time).
... The program cannot be compiled with the TURBO BASIC compiler (the USR function is not compatible), although it can be run in TURBO BASIC.

I hope that this program will breathe new life into your copy of Trivial Pursuit. If anyone undertakes the massive task of compiling complete new question disks how about sending them in to Page 6 so that they can be distributed to other Atari users as public domain?

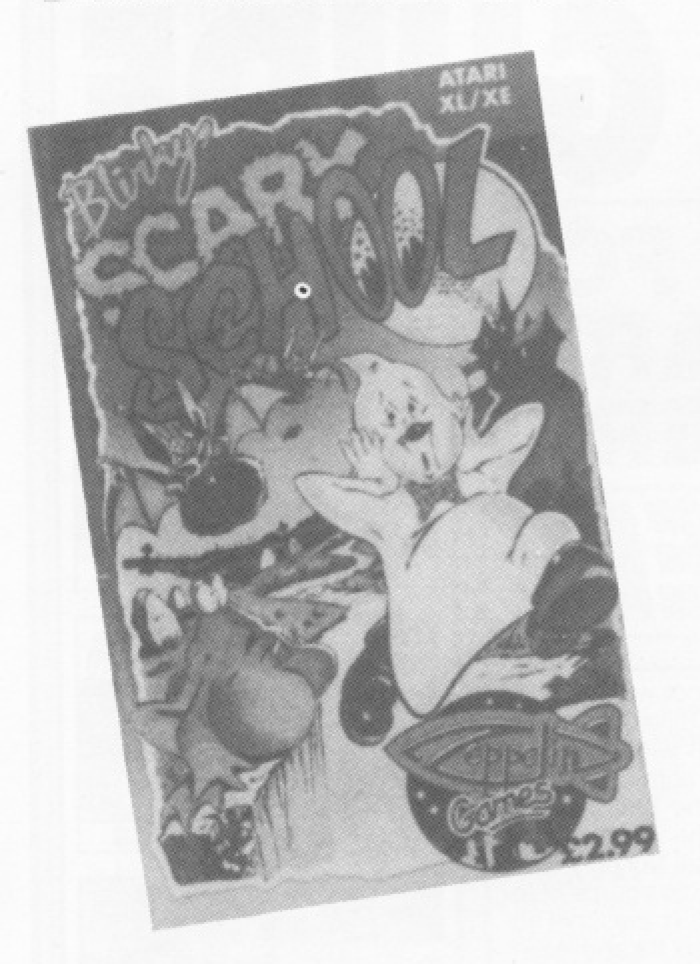
```
EI 1 REM *******************************
NW 2 REM *     "TRIVIAL PURSUIT"       *
BX 3 REM *     QUESTION COMPILER       *
GQ 4 REM *     by Chris Patterson      *
EC 5 REM * --------------------------- *
XJ 6 REM * NEW ATARI USER - JUNE 1990  *
EO 7 REM *******************************
NN 8 REM
UF 10 GOSUB 355:REM INITIALISE STRINGS
FT 15 DIM FILE$(15),F$(15),CAT$(8)
RN 20 DIM BLANK$(417):BLANK$(1)=" ":BLANK
   $(417)=" ":BLANK$(2)=BLANK$
BU 25 OPEN #1,4,0,"K:"
DB 30 GRAPHICS 0:SETCOLOR 1,0,12:SETCOLOR
    2,7,2:POKE 752,1
AA 35 POKE 16,64:POKE 53774,64:REM DISAB
   LE BREAK KEY
LU 40 PRINT :PRINT "TRIVIAL PURSUIT QUEST
   ION COMPILER"
JJ 45 PRINT "----------------------------
   -----"
NH 50 GOSUB 255:PRINT :PRINT "Compiling Q
   uestions :":GOSUB 505
OD 55 OPEN #5,4,0,FILE$:TRAP 205
YS 60 INPUT #5,NUMQ:BLOCK$(49,49)=CHR$(NU
   MQ)
JX 65 FOR CAT=0 TO 5
BE 70 REM
NY 75 INPUT #5,CAT$:IF CAT$="" THEN 75
UG 80 POSITION 2,11:PRINT BLANK$:POSITION
    2,11:PRINT "Category ";(CAT+1);" : ";
   CAT$:PRINT
ZB 85 FOR L=1 TO 8:A=32:IF L<=LEN(CAT$) T
   HEN A=ASC(CAT$(L,L))
HT 90 BLOCK$(CAT*8+L,CAT*8+L)=CHR$(A):NEX
   T L
BQ 95 REM
BE 100 FOR QUEST=1 TO NUMQ
EO 105 INPUT #5,QU$:IF QU$="" THEN 105
TD 110 INPUT #5,AN$:IF AN$="" THEN 110
MX 115 POSITION 2,12:? BLANK$
GE 120 POSITION 2,13:PRINT "Question : ";
   QU$:PRINT :PRINT "Answer : ";AN$
KK 125 GOSUB 605:REM COMPILE QUESTION AN
   D ANSWER
HN 130 NEXT QUEST
SL 135 NEXT CAT
NB 140 CLOSE #5
RJ 145 REM
NN 150 POSITION 0,11:PRINT BLANK$
BK 155 POKE 82,2:POSITION 0,9:PRINT "  Co
   mpilation Complete."
LF 160 PRINT :PRINT CHR$(253);"PUT THE DE
   STINATION DISK IN THE DRIVE":SETCOLOR
   2,2,2
XN 165 PRINT :PRINT "WARNING: PUTTING THE
    WRONG DISK IN":PRINT "WILL CORRUPT TH
   AT DISK"
EN 170 PRINT :PRINT "PRESS RETURN TO SAVE
    THE DATA AT THE":PRINT "NEXT AVAILABL
   E BLOCK ON DISK"
QS 175 GET #1,A:IF A<>155 THEN 175
IS 180 GOSUB 755:REM WRITE DATA BLOCK
HM 185 GOTO 30:REM RERUN
KU 200 REM ---------------------------
EW 205 PRINT CHR$(253):IF PEEK(195)=136 T
   HEN PRINT "END-OF-FILE ENCOUNTERED - C
   HECK":PRINT "QUESTION FILE":GOTO 215
WT 210 PRINT "ERROR ";PEEK(195)
PA 215 GOTO 305
LE 250 REM ---------------------------
JH 255 PRINT :PRINT "Please enter the nam
   e of the file":PRINT "containing the q
   uestions:":PRINT :POKE 752,0
SM 260 PRINT ">";:INPUT #16;F$:POKE 752,1
DT 265 IF F$="" THEN GOTO 305
OU 270 FILE$=F$
BH 275 IF  NOT (F$(3,3)=":" OR F$(2,2)=":
   ") THEN FILE$="D1:":FILE$(LEN(FILE$)+1
   )=F$
ZO 280 RETURN
KV 300 REM ---------------------------
OD 305 POP :PRINT :PRINT "PROGRAM TERMINA
   TED.":POKE 752,0:POKE 16,192:POKE 5377
   4,192:END
LF 350 REM ---------------------------
XZ 355 PRINT "Initialising..."
UZ 360 DIM QU$(70),AN$(70),BUF1$(140),BUF
   2$(140),BLOCK$(4096)
PM 365 DIM SCAN$(183),C$(1)
EB 370 RESTORE 902:FOR L=1 TO 183:READ A:
   SCAN$(L)=CHR$(A):NEXT L
CL 375 DIM CMP$(123)
YN 380 RESTORE 911:FOR L=1 TO 123:READ A:
   CMP$(L)=CHR$(A):NEXT L
MY 385 DIM CLEN$(64)
CG 390 RESTORE 918:FOR L=1 TO 64:READ A:C
   LEN$(L)=CHR$(A):NEXT L
RQ 395 DIM CODES$(128)
MZ 400 RESTORE 921:FOR L=1 TO 128:READ A:
   CODES$(L)=CHR$(A):NEXT L
ZV 405 DIM CONV$(123)
ZH 410 RESTORE 930:FOR L=1 TO 123:READ A:
   CONV$(L)=CHR$(A):NEXT L
YA 415 DIM SPECIAL$(71)
QG 420 RESTORE 939:READ SPECIAL$
ZC 425 DIM SPOS$(17)
YA 430 RESTORE 941:FOR L=1 TO 17:READ A:S
   POS$(L)=CHR$(A):NEXT L
RC 435 DIM SLEN$(17)
VZ 440 RESTORE 943:FOR L=1 TO 17:READ A:S
   LEN$(L)=CHR$(A):NEXT L
TP 445 DIM DIO$(30)
VO 450 RESTORE 954:FOR L=1 TO 30:READ A:D
   IO$(L)=CHR$(A):NEXT L
ZZ 455 RETURN
KX 500 REM ---------------------------
BZ 505 BLOCK$(1)=CHR$(0):BLOCK$(4096)=CHR
   $(0):BLOCK$(2)=BLOCK$
KL 510 RESTORE 945:FOR L=0 TO 123:READ A:
   BLOCK$(1+49+L,1+49+L)=CHR$(A):NEXT L
SW 515 BP=173:FOR L=0 TO 70
PY 520 A=ASC(SPECIAL$(L+1,L+1))
YF 525 IF A=32 THEN BLOCK$(BP,BP)=CHR$(12
   8+ASC(BLOCK$(BP)))
GG 530 IF A<>32 THEN BLOCK$(1+BP,1+BP)=CO
   NV$(1+A):BP=BP+1
HU 535 NEXT L
ZJ 540 RETURN
KY 600 REM ---------------------------
YJ 605 C$=QU$(1,1):IF C$>="A" AND C$<="Z"
    THEN C$=CHR$(ASC(C$)+32):QU$(1,1)=C$
CP 610 C$=QU$(LEN(QU$)):IF QU$=" " THEN Q
   U$=QU$(1,LEN(QU$)-1):GOTO 610
YY 615 IF C$="?" THEN QU$=QU$(1,LEN(QU$)-
   1):GOTO 610
RO 620 BUF1$(1)=CHR$(0):BUF1$(140)=CHR$(0
   ):BUF1$(2)=BUF1$
XH 625 L=USR(ADR(SCAN$),ADR(QU$),LEN(QU$)
   ,ADR(BUF1$),ADR(SPECIAL$),ADR(SPOS$),A
   DR(SLEN$),ADR(CONV$))
RM 630 IF L=0 THEN GOTO 730
TY 635 BUF1$=BUF1$(1,L):QLEN=L
QZ 640 REM
LO 645 C$=AN$(1,1):IF C$>="A" AND C$<="Z"
    THEN C$=CHR$(ASC(C$)+32):AN$(1,1)=C$
HI 650 C$=AN$(LEN(AN$)):IF AN$=" " THEN A
   N$=AN$(1,LEN(AN$)-1):GOTO 650
XJ 655 BUF2$(1)=CHR$(0):BUF2$(140)=CHR$(0
   ):BUF2$(2)=BUF2$
WI 660 L=USR(ADR(SCAN$),ADR(AN$),LEN(AN$)
   ,ADR(BUF2$),ADR(SPECIAL$),ADR(SPOS$),A
   DR(SLEN$),ADR(CONV$))
SH 665 IF L=0 THEN GOTO 730
GZ 670 BUF2$=BUF2$(1,L):ALEN=L
RU 675 REM
LI 680 BUF1$(LEN(BUF1$)+1)=BUF2$
OR 685 L=USR(ADR(CMP$),ADR(BUF1$),LEN(BUF
   1$),ADR(BLOCK$(1+BP+4)),ADR(CLEN$),ADR
   (CODES$))
VJ 690 BLOCK$(BP+1,BP+1)=CHR$(4+L+1):BLOC
   K$(BP+2,BP+2)=CHR$(0)
PT 695 BLOCK$(BP+3,BP+3)=CHR$(QLEN):BLOCK
   $(BP+4,BP+4)=CHR$(ALEN)
```

continued

TRIVIAL PURSUIT
QUESTION MAKER

```
ZA 700 BP=BP+4+L+1:IF BP>=4000 THEN GOTO
   715
ZS 705 RETURN
ZA 710 REM ----------------------------
HZ 715 PRINT CHR$(125);CHR$(253);"NOT ENO
   UGH MEMORY - REDUCE NUMBER OF":PRINT "
   QUESTIONS"
OS 720 GOTO 305
ZR 725 REM ----------------------------
IX 730 PRINT :PRINT CHR$(253);"ILLEGAL CH
   ARACTER FOUND - CHANGE":PRINT "SOURCE
   FILE"
PJ 735 GOTO 305
ZI 750 REM ----------------------------
OC 755 BUF1$(1)=BLANK$
UC 760 A=USR(ADR(DIO$),ASC("R"),ADR(BUF1$
   ),1)
RQ 765 SECTOR=ASC(BUF1$(3))+256*ASC(BUF1$
   (4))
UU 770 IF SECTOR<2 OR SECTOR>720 THEN SEC
   TOR=2
ZK 775 IF SECTOR>670 THEN GOTO 885
RI 780 REM
PO 785 L=1:BUF1$=BLANK$:BUF1$(128)=CHR$(6
   9):A=USR(ADR(DIO$),ASC("W"),ADR(BUF1$)
   ,SECTOR+50)
WE 790 A=46
AS 795 IF L+127>=BP THEN A=76
HF 800 IF L=1 THEN A=49
YE 805 C$=BLOCK$(L+127,L+127)
JT 810 BLOCK$(L+127,L+127)=CHR$(A)
MK 815 A=USR(ADR(DIO$),ASC("W"),ADR(BLOCK
   $(L)),SECTOR)
TK 820 BLOCK$(L+127,L+127)=C$
VX 825 L=L+127:SECTOR=SECTOR+1
LR 830 IF L<BP THEN 790
VU 835 BUF1$=BLANK$:BUF1$(128)=CHR$(69):A
   =USR(ADR(DIO$),ASC("W"),ADR(BUF1$),SEC
   TOR)
CP 840 BUF1$=BLANK$:A=INT(SECTOR/256):BUF
   1$(3,3)=CHR$(SECTOR-A*256):BUF1$(4,4)=
   CHR$(A)
ZO 845 A=USR(ADR(DIO$),ASC("W"),ADR(BUF1$
   ),1)
ZO 850 RETURN
ZP 880 REM ----------------------------
JI 885 PRINT CHR$(125);CHR$(253);"DISK FU
   LL - TRY ANOTHER"
PH 890 GOTO 305
ZA 900 REM ----------------------------
UM 901 REM  SCANS
NL 902 DATA 104,104,133,215,104,133,214,1
   04,104,133,216,104,133,218,104,133,217
   ,104,133,225,104,133,224,104
PL 903 DATA 133,227,104,133,226,104,133,2
   29,104,133,228,104,133,231,104,133,230
   ,169,0,133,219,133,212,133
AQ 904 DATA 213,164,219,177,214,201,65,14
   4,19,201,91,176,15,24,105,32,145,214,1
   60,94,177,230,164,212
UK 905 DATA 145,217,230,212,164,219,177,2
   14,72,169,0,133,220,169,0,133,223,164,
   220,177,226,24,101,223
FH 906 DATA 133,221,165,219,24,101,223,13
   3,222,197,216,240,38,164,222,177,214,1
   64,221,209,224,208,28,230
IO 907 DATA 223,165,223,164,220,209,228,2
   08,216,104,165,220,72,168,165,219,24,1
   13,228,133,219,198,219,169
ZL 908 DATA 255,208,8,230,220,165,220,201
   ,17,208,186,104,168,177,230,240,15,164
   ,212,145,217,230,212,230
YQ 909 DATA 219,165,219,197,216,208,130,9
   6,169,0,133,212,96
NZ 910 REM  CMPS
LX 911 DATA 104,104,133,215,104,133,214,1
   04,104,133,216,104,133,218,104,133,217
   ,104,133,220,104,133,219,104
BO 912 DATA 133,222,104,133,221,169,0,133
   ,223,133,212,133,213,133,224,164,223,1
   77,214,168,177,219,133,225
TO 913 DATA 152,10,168,177,221,133,226,20
   0,177,221,133,227,164,212,38,227,38,22
   6,177,217,42,145,217,230
GQ 914 DATA 224,165,224,201,8,208,6,169,0
   ,133,224,230,212,198,225,208,227,230,2
   23,165,223,197,216,208
IW 915 DATA 198,198,212,165,224,240,19,23
   0,212,164,212,38,226,177,217,42,145,21
   7,230,224,165,224,201,8
VK 916 DATA 208,239,96
UT 917 REM  CLENS
UN 918 DATA 1,4,6,5,5,4,6,6,5,4,9,7,5,6,4
   ,4,6,10,4,4,5,6,7,6,9,6,10,8,8,10,11,1
   1
PI 919 DATA 10,10,10,10,10,13,13,3,8,7,8,
   12,9,8,6,7,8,8,7,8,8,8,8,9,8,9,10,11,1
   0,10,10,5
MK 920 REM  CODES$
DI 921 DATA 0,0,160,0,184,0,56,0,144,0,22
   4,0,0,0,188,0
YE 922 DATA 48,0,16,0,156,0,204,0,216,0,2
   12,0,96,0,128,0
QS 923 DATA 208,0,10,128,112,0,32,0,248,0
   ,244,0,14,0,176,0
TK 924 DATA 158,128,180,0,200,192,12,0,15
   4,0,158,64,206,192,206,224
EC 925 DATA 242,64,242,0,10,64,10,192,206
   ,128,10,0,10,8,64,0
QV 926 DATA 207,0,152,0,157,0,10,16,200,0
   ,155,0,4,0,202,0
UI 927 DATA 241,0,159,0,8,0,240,0,11,0,20
   1,0,13,0,206,0
HE 928 DATA 243,0,156,128,242,192,10,32,2
   42,128,200,128,158,0,192,0
EM 929 REM  CONVS
MU 930 DATA 46,47,48,49,50,51,52,53,54,55
   ,56,57,58,59,60,61
OC 931 DATA 62,0,0,0,0,0,0,0,0,0,0,0,0,0,
   0,0
GO 932 DATA 39,0,41,0,0,43,0,42,0,0,0,0,4
   0,44,45,0
JZ 933 DATA 27,28,29,30,31,32,33,34,35,36
   ,37,38,0,0,0,0
PX 934 DATA 0,0,0,0,0,0,0,0,0,0,0,0,0,0,0
   ,0
AV 935 DATA 0,0,0,0,0,0,0,0,0,0,0,0,0,0,6
   3,0
VU 936 DATA 0,1,2,3,4,5,6,7,8,9,10,11,12,
   13,14,15
UW 937 DATA 16,17,18,19,20,21,22,23,24,25
   ,26
PW 938 REM  SPECIALS
WO 939 DATA who when why what which how d
   oes did is was and the to in of with y
   ear .
JD 940 REM  SPOS$
VO 941 DATA 0,4,9,13,18,24,28,33,37,40,44
   ,48,52,55,58,61,66
AO 942 REM  SLENS
YC 943 DATA 4,5,4,5,6,4,5,4,3,4,4,4,3,3,3
   ,5,5
HD 944 REM  DECODER DATA.
DX 945 DATA 37,64,65,30,66,17,62,61,36,33
   ,60,68,10,70,44,55
KN 946 DATA 73,75,27,28,76,77,78,79,51,80
   ,50,82,41,84,86,11
TJ 947 DATA 88,6,90,92,23,2,94,16,96,97,8
   ,4,100,63,103,104
LL 948 DATA 105,19,14,15,1,109,5,112,39,1
   15,117,119,121,123,38,43
KY 949 DATA 59,31,34,35,29,26,67,32,58,69
   ,57,24,71,72,74,52
LH 950 DATA 54,45,42,49,53,40,48,56,81,22
   ,83,85,47,87,89,46
IC 951 DATA 91,93,25,7,95,13,21,98,3,99,1
   01,102,12,20,9,106
JT 952 DATA 18,107,108,110,111,113,114,11
   6,118,120,122,124
BI 953 REM  DISK I/O DIO$
UB 954 DATA 104,169,1,141,1,3,104,104,141
   ,2,3,104,141,5,3,104
GK 955 DATA 141,4,3,104,141,11,3,104,141,
   10,3,76,83,228
```

BLINKY'S SCA



Zeppelin authors Ian Copeland and David Taylor take us behind the scenes and let us into some of the secrets of writing top games for the Atari

The last Laird of Drumtrochie castle, Hamish McTavish settled down to what he knew would be an uninterrupted nights sleep. Exactly one hundred years ago, unable to sleep for ghostly wailings, the fierce Red Laird McTavish had fought a fierce battle with the denizens of the underworld and banished all spiritual activity from Drumtrochie castle. But now on the anniversary of the battle the famous scary school for young ghosts has sent it's star pupil, Blinky, to frighten Hamish McTavish and once again allow ghosts to roam the castles four walls ....

BLINKY IS BORN

Blinky the ghost dressed in rather natty red boots and de rigeur white haunting sheet was born not in a rain lashed castle atop a dark brooding hill but, sadly, rather less atmospherically in the Zeppelin offices on a hot summers day. And the creation of his personality came not from a mad scientist but from the fevered imagination of Zeppelin's graphic artist Richard Beston, who despite evidence to the contrary is only a little bit mad. The design of Blinky came from half an hours doodling with scraps of paper, and eventually using a sprite editor to bring Blinky to life. Once it was realised that this new character may have star potential the go ahead for a game based around the character was given. Pausing only to move offices the saga of Blinky began to unfold.

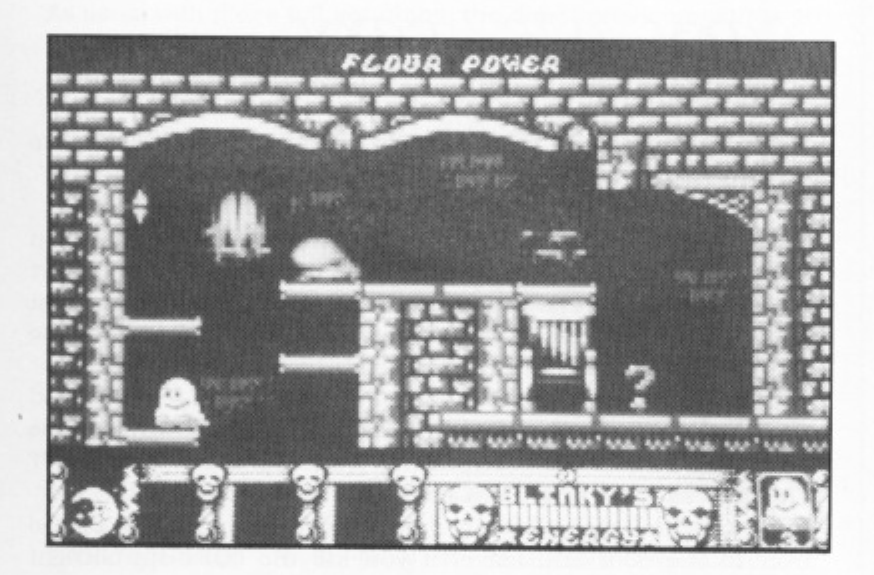
Blinky's Scary School is an arcade adventure in which the hero has to collect ingredients for potions, these potions give Blinky certain powers, which will help in the main task of waking Hamish McTavish (though how this is achieved is for now top secret!). The story line and graphics for Blinky's were all completed long before programming began, the writing of Fantastic Soccer was in progress at the time. This also allowed the graphic artists time to produce a large scale map of Drumtrochie castle which would show the position of all the rooms, the location of all the objects and enemy sprites (Castle Drumtrochie is well defended by creatures hostile to ghosts). It was hoped this would make the writing of the game easier but thanks either to a disgruntled relative of Blinky or possibly just an over enthusiastic cleaner the map disappeared one night never to be seen again, which meant that the game had to be totally redesigned - a disheartening prospect but once programming began things started to run more smoothly.

CREATING THE ROUTINES

Programming a game tends to fall into several separate segments - the writing of sprite routines, producing editors to piece together all of the rooms, and finally the actual game mechanics, the 'objectpickerupper' type routines. At Zeppelin all Atari 8-bit games are written using an ST and a 6502 editor which for some strange reason is known as Jacky. Jacky is incredibly powerful and can assemble around 100k of source file, then port it across to a waiting XL in around seven seconds. It is this speed that allows Zeppelin to write games quickly and of course economically.

Blinky is a flip screen game with about sixty rooms making up Hamish's Castle. The main problem game programmers face is fitting large numbers of rooms into the memory allowed. If each room was held in memory as a screen, (in the graphics mode used in Blinky's a screen is about 4k), then to hold all sixty rooms would take 240k. This is of course totally unfeasible. The method used for all sixty rooms is commonly used by programmers and whoever first thought of it is one of the unsung heroes of the computer industry. The answer is to break up the elements of the rooms, the chairs, brickwork, etc into blocks. Each block has a number and the rooms are stored as rows of these numbers. For example if a chair was 10 and a blank bit was block 1 then 4 chairs with a space in between would be held as 10, 1, 10, 1, 10, 1, 10. In Blinky's there are 120 blocks and each block is 2 characters high by 4 wide. To hold these 120 blocks takes just 4k (or one screen). The rows of numbers that make up the rooms are a further 6k (there are 100 blocks to a room therefore 100 numbers or bytes and 60 rooms totals roughly 6000 bytes or 6k. The total is therfore only 10k, a grand saving of 230k! It is this basic principle that makes games possible and without it games could only have 1 or 2 screens.

ARY SCHOOL



DESIGNING THE ROOMS

What I have described is fine in theory but it does not explain how the rooms were put together. Unfortunately computers just do not have the imagination to create rooms by themselves and so a little human help is needed. Instead of typing out the numbers that make up the rooms which would be incredibly tedious, an editor program was written which, when a joystick wielding graphic artist was let loose, would allow the rooms to be designed. The artist could flick through the blocks and when he had the one he wanted, use the joystick to position it on screen, using fire to place it down. With a maniacal glint in the artists eye devious traps and gaps were created to catch the unwary player. The best way to describe the editor is as a jigsaw puzzle, with the picture slowly coming together as pieces were laid down (though of course we knew the last piece wasn't missing!). Once the rooms were designed the data was saved to disk and inserted into the game. Now we had a castle but no inhabitants!

ONLY ONE SPRITE?

The Atari XL is able to display four hardware sprites onscreen at any one time, and it was decided at an early stage to use all four for Blinky himself. Two for Blinky's white body the other two for his red boots. This of course left the problem of how to show the other characters in the game from the spiders to Hamish himself, and so a software sprite routine was written. Software sprites are totally independent of the hardware (hence their name!), and have certain advantages over hardware sprites. The main advantage is that, within reason, you can have a large number onscreen at once, your only limit being the speed of the processor. Another advantage is size, using the hardware sprites limits you to a sprite eight pixels wide (the reason why Blinky is two hardware sprites across), again within reason a software sprite can be any size. But of course nothing is perfect and there are horrendous disadvantages, software sprites take up large amounts of memory compared to hardware and to move smoothly onscreen must be both masked and shifted. The reasons for shifting a sprite are complex to explain but basically involve holding four images of a sprite each one shifted along one pixel along from the last. The frame that is displayed depends on the whereabouts of the sprite onscreen. Masking is the process whereby a sprite is moved over backgrounds without destroying them. It involves holding a block larger that the sprite with a sprite shaped hole in. The background underneath the sprite is cut out and stored in memory using this block as a 'mask'. When the sprite moves on the background is replaced by the stored piece of background and the process continues. Each sprite and the other three shifts requires a mask. This requires an enormous amount of memory but once again there are solutions. A routine was written which would work out all the masks and shifts for only the sprites in the room in which Blinky was about to enter. This working out happens when the screen goes blank between rooms and explains the slight delay for the new room to appear.

GETTING THERE

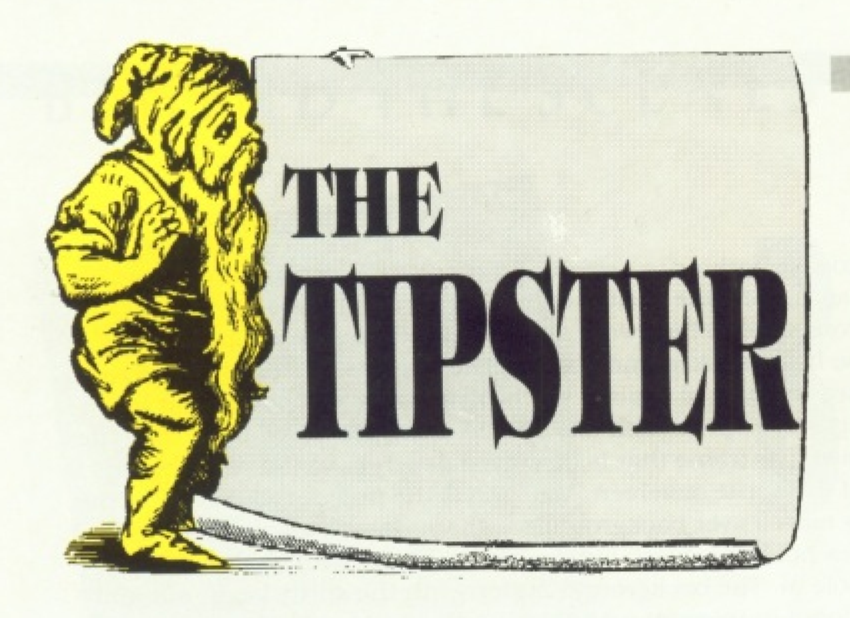
Once the sprites were moving the game began to take shape and screenshots for the cassette inlays were taken. At this stage there were still a few rough edges which needed smoothing out before the game was finished. One thing which was missing was sound effects, so once again Zeppelin's Atari musician Adam Gilmore was sent details in order to write the game music and sound effects.

In the meantime the small but important routines were written. Routines such as the clock (Blinky has until sunrise to wake Hamish McTavish), and an energy bar to represent Blinky's spiritual energy which is depleted after contact with the castles nasties. It was whilst writing one of the more important 'small' routines that a problem was discovered. Blinky has to collect certain objects in his task and in writing the 'objectpickerupper' routine, it was discovered that no one could recognise what the objects actually were! Originally it was intended to represent the objects graphically but due to the screen resolution the used objects were unclear. What was 'Herman the Haggis' to us would be just a mass of colour to others, therefore a compromise was necessary. The answer was to ditch the graphics (cue one upset graphic artist) and replace them all with one question mark, and at the top of the screen give a small cryptic clue to what the object was. Some of the clues border on the surreal "Des" greatest hits (a favourite singer possibly?) to downright awful puns like like "flour power". Whilst not perfected it was hoped that this solution would not detract form the game play. Once the objects are picked up they are shown in the game display which, being in the high resolution, allows clear graphics to be produced.

IT'S DONE!

Once the sound effects were completed and added into the game, all that remained was a period of game testing. Even the most well written programs have bugs and Blinky's was no exception. But once all the bugs were completely eradicated the game was declared complete. A master tape was prepared ready for duplication and the programmers bowed out leaving their creation to the whims of the marketplace.

The next project for Zeppelin is a temporary abandonment of the XL by the inhouse team, to produce a 16-bit Blinky but never fear we will be back with Blinky II in which Blinky goes on holiday to the good ol' U.S. of A! ●



The Tipster is here again with a whole host of hints and tips on a variety of games as discovered by you - the ever vigilant and brilliant Atari fanatics. Let's blast off this time with our prizewinner, get down to a breakdown of POWERDOWN!

A complete breakdown from P.J. Terry who will soon be tinkling away on his freebie. Here we go but first make sure you avoid lazer beams at all times!

Go **UP** and **LEFT** and **UP** again. Shoot through the red blocks so that the Blue Guard comes out. Go **DOWN** and **RIGHT**. **WAIT** until the Guard has turned the white bricks to red. Shoot through the red bricks. Return to the collection of red bricks that are to your **LEFT**. Get the **SHIELD**. Fire it so that it is in the **RIGHT** enclosure and open the door. Shoot through the three rows of red blocks.

Fire the shield up to where the radar is. Now, fire the shield to the **LEFT** (avoiding the lazer fire). Fire the shield up to the door then open the door. Fire the shield through the door and close the door behind you.

Go to the far **RIGHT** and use the shield to block the electronic forcefield. Fire **DOWNWARD** to release the Guards. Collect all the shields you can find. Take the shield **UP** and to the **LEFT**. Open the door and use three of the shields to block off the forcefield as before.

Put all the other shields next to the door. Keep all doors open and coax the Guard up to this area. When here, view the television screen which is directly above the door, using the scanner. The Droid will have created a 3-digit code. Fire that code into the combination panel next to the door.

Go **UP** and to the **LEFT**, take the shields with you and position them near the narrow passageway. Release the Guards by firing at the red blocks and they will turn all the surrounding white blocks red.

Close the combination door by changing the combination and firing at the pad on the other side. When all the blocks are red, release the Droids and lock them out using the combination door. Bring all the shields up with those that you will discover. Fire one to block the large gate and fire the rest as far up through the hole on the far **RIGHT** as you can get them.

Close the door and dodge **UP** whilst it shields you from the lazer fire. Cover Argon's cannons on the **RIGHT** using three shields and shoot the rest as far **LEFT** as you can get them. Shoot **LEFT** at the gate. As it closes, dodge to the **LEFT**.

Cover Argon's cannons with three of your shields and shoot the remaining one up the hole on the **LEFT** to cut off the forcefield. Go **DOWN** and shoot **RIGHT** to close the door. Shoot the red blocks near Argon and let one Droid through to destroy the white blocks.

Shoot through these when they are red. Argon will be killed and the combinations for the four reactors will be static. Fire in **ALL FOUR** combinations and the power will be shut off ..... your mission is complete!!

SPY VS SPY

Help on this comes from Richard somebody, I couldn't make out his surname - must get some new glasses!

First you must kill the other spy when you start. Then you booby-trap all the doors and find the room with the Airport door. Once you are in there you booby-trap the doors. The best traps to use are the water bucket on the side doors and the gun/string on the bottom of doors.

This way, when the other spy comes in, he will get killed and drop the stuff that he was carrying. Then reset the trap on the door and search the room. When you find the objects DON'T store them; just put them back.

Keep this up until they are all found then pick them up. Go over to the door and leave. If you kill the other spy outright with a booby-trap where he doesn't actually come into the room, then go to the one in which he died and collect the stuff.

If you ever find that you are blocking a door, i.e. you are standing in a doorway and he can't get past, but you are not on the same screen, then access your trapulator, select the time-bomb and drop it. Move and let him in then go out and block him from the other side and he gets blown up!

CRUMBLE'S CRISIS

A little snippet from Gareth Powell. On the second level when it says 'DO YOU WANT TO PRACTICE?' press the 'N' key, turn the cassette over, rewind it and press PLAY then press RETURN. Now you will get onto the third level!



Paul Shakespeare gives us some tips on this Zeppelin 1990 release.

Hint 1: *When the Goalie has the ball, in a place kick - yours or opponents - the player runs towards the Goalie. Press the button and a foot can be seen from underneath the player. Do this as near the ball as possible.*

Hint 2: *When you or your opponent are chasing the ball, press and depress the button and the foot will come out and you will run faster.*

Hint 3: *When you are in the clear for a goal, go at an angle - NOT straight!*

THIS ISSUE'S COMPLETE ADVENTURE SOLUTION!

Remember way back in the infancy of these pages when someone called out from the darkness: "Got anything on OPERA HOUSE?" .... well here it is, courtesy of K.A. HURRY of Crewe!!

OPERA HOUSE

(Big Nose Software)

As usual with these full solutions, the directional commands are 'as is' but the verb/noun input is reversed, i.e. LOOK TABLE becomes KOOL ELBAT!!

KOOL EERT - EVOM EERT - S - UP - TEG NOTAB - D - NEPO ONAIP - TEG SGNIRTS - N - W - KOOL REVEL - TEG EGDEW - OG ROOD - KOOL ELBAT - TEG TEKCIT - OG ROOD - N - W - KOOL SREKCOL - TEG WOB - E - TEG TLOB - XIF WOB - DAOL WOB - TEG NACLIO - S - LLUP REVEL - E - PORD WOB - E - OG ROOD - KOOL ELBAT - KOOL ESOUM PART - TEG ESEEHC - ESU NOTAB - TEG ESEEHC - OG ROOD - N - TEG RENNAPS - S - W - W - N - BMILC REDDAL - PORD RENNAPS - BMILC REDDAL - S - E - S - S - TEG HCROT - S - E - E - OG ROOD - N - KOOL DRAOBPUC - TEG TSRIF DIA TIK - S - S - W - W - THGIL HCROT - OG SRIATS - UP - THGILNU HCROT - N - OG SRIATS - LIO TIXE - EGDEW TIXE NEPO - PORD TSRIF DIA TIK - D - S - W - TEG KAOLC - RAEW KAOLC - E - THGIL HCROT - D - D - THGILNU HCROT - N - N - N- W - N - TEG REVIRDWERCS - S - E - S - S - S - OG ROOD - E - E - S - EVIG TEKCIT.

N - THGIL HCROT - OG ELOHNAM - PORD KAOLC - TEG SAG KSAM - RAEW SAG KSAM - TEG PMAL - N - EVIG ESEEHC - W - LIO DOOLF ETAG - NEPO DOOLF ETAG - OG DOOLF ETAG - E - KOOL PMAL - PORD PMAL - N - W - UP - WERCSNU LLIRG - OG LLIRG - DNAH FFUC SGNIR - E - OG ROOD - OG PART ROOD - W - LLUP REVEL - E - S - S - S - OG SRIATS - UP - THGILNU HCROT - N - OG SRIATS - KOOL TSRIF DIA TIK - TEG NOTTOC LOOW - TEG MROFOROLHC - OG TIXE - RUOP MROFOROLHC - PORD LOOW - OG TIXE - D - S - THGIL HCROT - D - D - N - N - N - TEG WOBSSORC - THGILNU HCROT - W - N - BMILC REDDAL - TEG RENNAPS - ESOLC EVLAV - PORD RENNAPS - BMILC REDDAL - S - LLUP REVEL - E - OG PART ROOD - OG ROOD - W - LLIK MOTNAHP .... to complete the game!!

MAP OF STORM AND MORE HINTS OVERLEAF ☞

AND THE WINNER IS ...

P.J. Terry should be having a tinkle by now on his new CASIO SA-1 ELECTRONIC KEYBOARD, his prize for the best contribution to the Tipster column this issue. If you want to try and win something send in a map, some hints or tips or a solution and you could be the lucky owner of three great videos (VHS format) - GHOSTBUSTERS, THE DARK CRYSTAL and Michael Jackson's MOONWALKER. Now you can watch the film of the game and then go and play the game of the film. Only if you send in some great hints, tips, maps or solutions though.

STORM

M.T.S. F. 2BR.K (SP. N°1) B

KNW

MIDDLE STONES DISSAPPEAR

SP. N°2

THIS C. MUST BE TOUCHED

LEGEND

K	= Key
M	= Mask
F	= Food
S	= Scroll
BR	= Brooches
T	= Treasure
A	= Armour
B	= Bottle
C	= Cabbalas
KN	= Key Needed
KNW	= Waste of a key!
BN	= 3 Brooches needed
SKN1	= Special Key No.1 needed
SKN2	= Special Key No.2 needed
SPN 1+2	= Special Key found here
ST	= START

= Dissappearing Wall

= Impassable Wall

(Mapped by Tony Johnson)

FEUD

A couple of lads' tips have been put together to help you out on this one. Thanks to Dean Chadwick and Stephen Garbett.

1. You take the role of Learic and playing the game is simply a matter of moving through the Kingdom collecting ingredients to make spells that you are then able to mix and use against your opposing Wizard - but remember ... he's doing the SAME and is out to destroy you!
2. Sprites, Fireballs and Lightning can be dodged but you musn't run away!
3. Villagers and Travellers can be changed into Zombies. Villagers, being of low intelligence are more susceptible to order when in a 'Zombie' state. They will walk in the direction you indicate but won't leave the limits of their own territory.
4. The compass points to Leanoric.
5. To get a lot of spells, go to the Herb Garden. To find the garden, when you appear on the screen if you move UP you will see a fence and a Gardener. Follow the fence around until you come to an entrance. Enter and collect as many herbs as you can before the Gardener comes and drains your energy. If you hang around for too long your brother will arrive.
6. When mixing spells, stand in front of your cauldron and press the FIRE button, then move your joystick left and right to turn the bottom of the spell book. When the book is opened to the required spell, release the FIRE button if you have both the ingredients. This is shown in red lettering in the spellbook. The spell will be mixed and you will then be 'armed' with it.
7. To cast a spell, you need to be armed with it. If this is done at the mixing stage, push the joystick UP and release the button to cast a spell. Some spells may only be used once, whilst others can be used a number of times. Different spells can be cast by turning the spell book pages whilst holding down the FIRE button, similar to mixing spells.
8. To collect HERBS stand in front of the herb and walk towards it. The Wizard will bend down and pick it up - successfully picking up the herb will be shown on the spellbook.
9. Spells & Ingredients:

A. TELEPORT = DANDELION + BURDOCK
B. PROTECT = PIPERWORT + RAGWORT
C. SPRITES = SNAPDRAGON + TOADFLAX
D. ZOMBIE = DEVILSBIT + BONES
E. SWIFT = SPEEDWELL + MAD SAGE
F. FREEZE = BIND WEED + BOG WEED
G. DOPPLEGANGER = FOXGLOVE + ATSEAR
H. INVISIBLE = CHONDRILLA + HEMLOCK
I. REVERSE = THISTLE + SKULL CAP
J. HEAL = BALM + FEVERFEW
K. FIREBALL = DRAGONSTEETH + MOUSETAIL
L. LIGHTNING = CUDWEED + KNAP WEED

Thank you all once again for your continuing support for the Tipster pages and thus lending a much-needed helping hand to your fellow Atarians! Don't forget to keep 'em coming and don't forget the new games like those reviewed this issue. Will YOU be the first to crack the latest games?

Send your hints, tips, maps and solutions to

THE TIPSTER
NEW ATARI USER
P.O. BOX 54, STAFFORD, ST16 1DR

A TIPSTER EXCLUSIVE!



Every reader sending in a NEW hint, tip, cheat or map will receive THE TIPSTER's unique badge, whether the contribution is used or not. The only qualification is that the tip must not have been used before in this column (ripping pages out of old Atari User mags doesn't count either!). Please note that we cannot indicate whether your hint or tip will appear in a future issue - it might, it might not - depends what The Tipster had for dinner when he comes to type up the column.

QUICK DOS

by JUAN JOSE RODRIGUEZ

Here's another neat little program from our friend Juan Jose Rodriguez from Venezuala, a modification to DOS 2.5 that will enable seasoned users to save a little time when using DOS.

As you know, each of the DOS menu functions requires at least two keypresses, one to select the item and then RETURN to execute it. Juan's program will modify your DOS so that you only need to press a single key for each option, you'll be surprised at how much more pleasant this modified DOS is to use.

Type in the program shown and SAVE it to disk. Make sure you have a disk with a couple of free sectors in your drive and then RUN the program, it will write a file to your disk called MDF25. Next call up DOS (make sure you are using DOS 2.5) and select option L - BINARY LOAD and use the filename MDF25. Once you have run this you will find that your new 'one-touch' DOS is active.

All that remains is to save your newly modified DOS 2.5. Just get a new disk to act as your master and select item H (format the disk first if you need to) to write DOS. Now whenever to boot up with this new disk, your 'one-touch' DOS will be active. Simple and a pleasure to use!

```
EX 1 REM ##################################
VB 2 REM #      ONE-TOUCH DOS 2.5         #
QG 3 REM #   by Juan Jose Rodriguez       #
HB 4 REM # ------------------------------ #
RF 5 REM # NEW ATARI USER - June 1990 #
FC 6 REM ##################################
NM 7 REM
LT 100 TRAP 150
ZK 120 OPEN #1,8,0,"D:MDF25"
CG 130 RESTORE
NG 140 READ A:PUT #1,A:GOTO 140
IH 150 CLOSE #1:END
QM 1000 DATA 255, 255,0,6,77,6,162,0,189,
   14,6,157,127,48,232,224,64,208,245,96,
   162
BN 1010 DATA 48,141,164,29,141,160,48,32,
   113,48,173,245,30,16,6,32,146,25,76,15
   ,33
DA 1020 DATA 162,48,169,160,32,176,49,173
   ,164,29,96,32,155,173,37,228,72,173,36
   ,228,72
ZL 1030 DATA 96,0,0,0,0,0,0,0,0,0,0,0,0,0
   ,0,0,0,0,0,0,0
XI 1040 DATA 224,2,225,2,0,6
```



GREEN FINGERS

Green Fingers is an arcade/strategy game for 1 player requiring a joystick. The object is to grow as many flowers as possible and sell them in the shop.

Play commences in the shop where you are given a menu with the various things you may need to grow the flowers. By using the joystick position the arrow next to the item you want and press the button to purchase it. You are allowed up to 5 purchases on each trip to the shop.

Armed with your purchases you exit the shop by selecting the exit option and pressing the joystick button. Next you drive down the road to your house taking care not to go through too many red lights or you'll wind up in jail for a while.

At home you go to the greenhouse and your purchases are added above the appropriate column up to maximum of 9. The upper part of the screen contains a number of bases for your plant pots to stand on. To pick up items use the joystick to move the arrow across the menu and press the button to select. On doing so a cursor appears in the upper part of the screen. Use your joystick to position the cursor above the required base and press the button to deposit the item. To return to the menu portion of the screen merely move the cursor down until it disappears. Note however that if you are carrying a pack of 6 items such as pots deposit them all before returning to the menu otherwise you will lose the remainder. The watering can, the net and the scissors stay on the menu and can be used continually.

Make trips to the shop to replenish stocks as necessary or to sell your flowers before the shop closes.

GARDENING TIPS

You will need pots, compost and seeds in that order to begin with and then you will need to water the plants frequently to make them grow. Watch for pests such as flies, butterflies and slugs. To use fly killer or the net etc select it and touch the pest with your cursor. If the pests touch your plants you will need dust or pellets etc to kill their offspring or the plant will die.

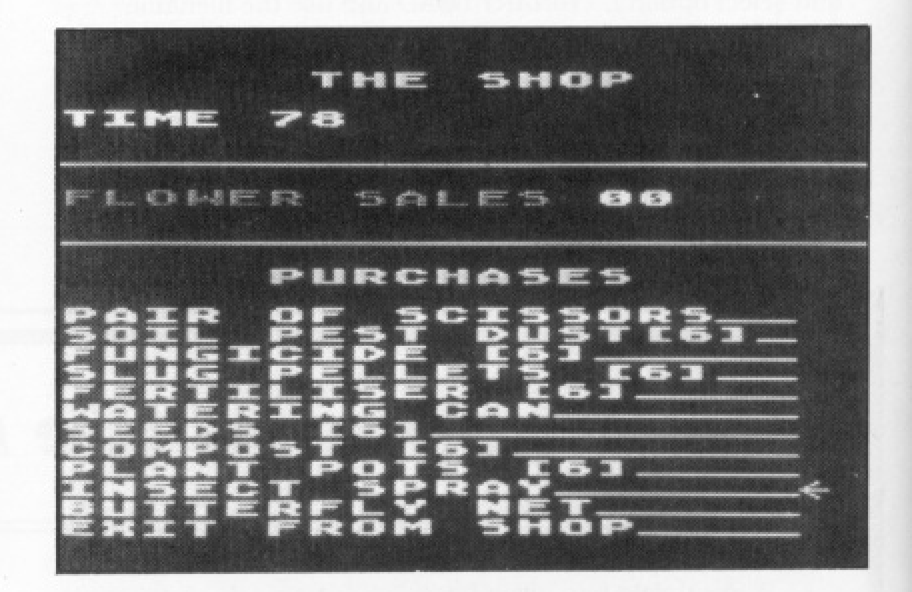
Check your plants regularly for signs of trouble - they will flash - and take remedial action. If watering doesn't work and they aren't crawling with pests it might be mildew. Fungicide should clear this.

That's all the tips you are going to get. I'm not saying how to kill a slug or what to do when your watering can disappears before your eyes or while you are away because that would be telling. The strategy is yours and you'll find out in due course. If the neighbours complain about the music it can be muted by pressing OPTION.

Happy gardening!

by BILL HALSALL

Fancy a bit of indoor gardening? It may be harder than you think!



TYPING IT IN

Cassette and disk users should type in Listing 1, SAVE or CSAVE a copy, then RUN the program. The program will check each line of data and inform you of any errors. Correct any errors and RUN the program again until all errors are eliminated. When this is done answer the cassette/disk questions accordingly to create a boot tape or binary disk file.

To load the boot tape remove all cartridges then turn on the computer while holding down the START key (XL owners should hold down OPTION as well). Press RETURN and the tape will load and run automatically.

Disk users should type in Listing 2 and save it on the same disk as the binary file created by Listing 1. RUN the Listing 2 program with the disk in the drive and the game will load and run automatically.

Note for disk users: If any other programs have been used prior to Listing 2 being loaded it is recommended that the computer be turned off and on again before Listing 2 is loaded and run to ensure that the game isn't corrupted by any data left in memory.

Note for 16K users: Although you need more than 16K to accommodate Listing 1 the boot tape produced will run on 16K machines. So, if you have any friends with larger machines who will produce a copy of the boot tape you can still play the game.

GREEN FINGERS

```
EX 1 REM ##################################
OU 2 REM #        GREEN FINGERS           #
AG 3 REM #        by Bill Halsall         #
HB 4 REM # ------------------------------ #
RF 5 REM # NEW ATARI USER - June 1990 #
FC 6 REM ##################################
NM 7 REM
NA 14 REM  BOOT TAPE/OBJECT CODE FILE
      MAKER - BASED ON HEXSAVER
         BY NICK HIGGS
BK 16 REM
PD 20 DIM LINE$(96),A$(8192):LINE=990:CNT
   =-48:TRAP 100:GOSUB 200
LM 30 A$(1)="0":A$(8192)="0":A$(2)=A$
RG 40 LINE=LINE+10:CNT=CNT+48:READ LINE$,
   CHKSUM:? "CHECKING LINE ";LINE
IH 50 CHK=USR(1536,ADR(LINE$),ADR(A$)+CNT
   )
QI 60 GOSUB 300:GOTO 40
VH 100 IF PEEK(195)<>6 THEN ? "ERROR ";PE
   EK(195);CHR$(253):END
AL 110 ? "WORKED OKAY":TRAP 100
RX 120 ? "(D)ISK OR (T)APE":GOSUB 180:IF
   K=68 THEN 140
AK 130 ? "READY CASSETTE AND PRESS RETURN
   ":OPEN #1,8,128,"C:":GOTO 160
KV 140 ? "READY DISK AND PRESS RETURN":GO
   SUB 180:IF K<>155 THEN 140
FW 150 OPEN #1,8,0,"D:GREENFIN.OBJ"
XO 160 ? #1;A$(1,5632):CLOSE #1:END
ZH 180 CLOSE #1:OPEN #1,4,0,"K:":GET #1,K
   :CLOSE #1:RETURN
MQ 200 FOR A=1536 TO 1658:READ D:POKE A,D
   :NEXT A:RETURN
IX 210 DATA 216,104,104,133,204,104,133,2
   03,104,133,206,104,133,205,169,0,141,1
   27,6,141
IZ 220 DATA 128,6,160,255,140,125,6,140,1
   26,6,173,126,6,201,47,208,11,173,127,6
QG 230 DATA 133,212,173,128,6,133,213,96,
   172,125,6,200,140,125,6,177,203,32,111
   ,6
IS 240 DATA 10,10,10,10,141,123,6,172,125
   ,6,200,140,125,6,177,203,32,111,6,24
ZH 250 DATA 109,123,6,172,126,6,200,140,1
   26,6,145,205,24,109,127,6,141,127,6,17
   3
MY 260 DATA 128,6,105,0,141,128,6,76,30,6
   ,96,201,58,144,4,56,233,55,96,56,233,4
   8,96
YL 300 DLNE=PEEK(184)*256+PEEK(183)
RV 310 IF LINE<>DLNE THEN ? "LINE ";STR$(
   LINE);" MISSING!":END
QZ 320 IF CHKSUM<>CHK THEN ? "ERROR IN DA
   TA AT LINE ";STR$(LINE):END
ZF 330 RETURN
XE 1000 DATA 002C00202720A9008D2F02A93C8D
   02D3A9008DE702850EA9388DE802850FA92885
   0AA920850B18604C553400000000000,3557
DI 1010 DATA 0000000000000000818181818181
   8181183C3C3C3C18003F7FFF7F4A7B4A7880
   C0E4C24FC244C000112141F9412111,4100
ON 1020 DATA FEFFFF05050505FFFF81FF424242
   427EFFFFFF7E7E7E7E00000000000008080808
   080868683818080800B0B6E6C381808,4151
UN 1030 DATA 000000081C1C1C081C3E7F77777F
   3E1C00102040FC40201000000008492A1C0808
   0808363600080800000808143E362A00,1765
NR 1040 DATA 0008000080808000000000081400
   000000001408080000000000A040C0F8FE7F00
   000502031F7FFE00001408081400 00,1627
JN 1050 DATA 0F143574253F2A3FF854565752FE
   AAFE00000040FF3E0C0400040C5EFF00000000
   000002FF7C30200020307AFF000000,3354
BE 1060 DATA 0000000000003428250033282F30
   00000000000000000000000000000000000000
   0000000000000074696D6500D0D000,1162
RM 1070 DATA 0000000000000000000000000000
   0000000000000000000000000000000000003F
   3F3F3F3F3F3F3F3F3F3F3F3F3F3F3F,1008
KW 1080 DATA 3F3F3F0000000000000000000000
   00000000000000000000A6ACAFB7A5B200B3A1
   ACA5B300D0D0000000000000000000,2563
KK 1090 DATA 0000000000000000000000000000
   00003F3F3F3F3F3F3F3F3F3F3F3F3F3F3F3F3F
   3F3F3F000000000000000000000000,1260
IZ 1100 DATA 0000000000000000000000000030
   35322328213325330000000000000000000000
   000000000000000000000000000000,398
XT 1110 DATA F0E1E9F200EFE600F3E3E9F3F3EF
   F2F3FFFF0000F3EFE9EC00F0E5F3F400E4F5F3
   F4FBD6FDFF0000E6F5EEE7E9E3E9E4,9537
VB 1120 DATA E500FBD6FDFFFFFFFFFF0000F3EC
   F5E700F0E5ECECE5F4F300FBD6FDFFFF0000E6
   E5F2F4E9ECE9F3E5F200FBD6FDFFFF,9651
VO 1130 DATA FFFF0000F7E1F4E5F2E9EEE700E3
   E1EEFFFFFFFFFFFF0000F3E5E5E4F300FBD6FD
   FFFFFFFFFFFFFFFFFF0000E3EFEDF0,9747
GJ 1140 DATA EFF3F400FBD6FDFFFFFFFFFFFFFF
   0000F0ECE1EEF400F0EFF4F300FBD6FDFFFFFF
   FF0000E9EEF3E5E3F400F3F0F2E1F9,9729
KH 1150 DATA FFFFFFFFFFFF0000E2F5F4F4E5F2
   E6ECF900EEE5F4FFFFFFFFFF0000E5F8E9F400
   E6F2EFED00F3E8EFF0FFFFFFFF0E00,9551
ME 1160 DATA 1A1A1A1A1A1A1A1A1A1A1A1A1A1A
   1A1A1A1A1A1A1A1A1A1A1A1A1A1A1A1A1A011A
   1A1A1A011A1A000000000000000000,1016
AH 1170 DATA 0000820000000000000042001A1A
   1A1A1A1A1A1A1A011A1A1A1A1A011A1A1A
   1A1A1A011A1A011A1A011A1A1A1A1A,1033
TU 1180 DATA 1A011A1A000000000000000000001A
   011A1A1A1A1A011A1A1A1A1A011A1A011A
   1A00000000000000001A011A1A1A1A1A,734
HP 1190 DATA 011A1A011A1A1A1A1A1A011A1A01
   1A1A1A1A1A011A00420000000000000000001A
   011A1A1A1A1A011A1A011A1A1A1A,854
KB 1200 DATA 1A1A011A1A011A1A1A1A1A1A011A
   1A011A1A1A1A1A1A1A011A011A1A1A1A1A1A01
   1A1A011A00000000000000000000001A,788
BV 1210 DATA 1A1A011A011A1A1A1A1A1A1A1A1A
   1A011A011A1A1A0000000082001AF4E9EDE51AD0
   D01A011A1A1A1A1A1A011A011A1A1A,2276
YW 1220 DATA 1A1A1A1A1A1A1A011A1A1A1A1A1A
   011A011A1A1A1A1A1A1A011A1A00000000001A
   000000000000000000000001A1A1A,706
GF 1230 DATA 1A1A1A1A1A1A011A1A1A1A1A1A1A
   1A1A011A1A1A1A1AC3C41A0000000000000000
   000000420001A1A1A1A1A1A1A011A,1214
RJ 1240 DATA 1A1A1A1A1A1A1A1A011A1A1A1A1A
   1A1A1A1A1A1A1A1A1A1A1A1A1A1A011A1A1A1A
   1A1A1A000000000000000000000000,886
SM 1250 DATA 000000001A1A1A1A1A1A1A1A1A1A
   1A1A1A1A1A1A011A1A1A1A1A1A1A85861A1A1A
   1A1A1A1A1A1A1A1A1A1A1A1A1A1A1A,1334
OU 1260 DATA 000000F4E8E500E7F2E5E5EEE8EF
   F5F3E500000000000000000000000000000000
   000000000000000000000000000000,3062
AC 1270 DATA 0000000000000000000000000000
   000000000000000000000000000000000000FF
   00FF00FF00FF00FF00FF00FF00FF00,2040
```

GREEN FINGERS

```
HA 1280 DATA FF00FF0000000000000000000000
   00000000000000000000000000000000000000
   000000000000000000000000000000,510
KP 1290 DATA 0000000000000000000000000000
   0000FF00FF00FF00FF00FF00FF00FF00FF00FF
   00FF00000000000000000000000000,2550
ZF 1300 DATA 0000000000000000000000000000
   00000000000000000000000000000000000000
   000000000000000000000000000000,0
OF 1310 DATA FF00FF00FF00FF00FF00FF00FF00
   FF00FF00FF0000000000000000000000000000
   000000000000000000000000000000,2550
ZP 1320 DATA 0000000000000000000000000000
   000000000000000000000000000000000000FF
   00FF00FF00FF00FF00FF00FF00FF00,2040
UH 1330 DATA FF00FF0000000000000000000000
   00000000000000000000000000000000000000
   000000000000000000000000D0D0D0,1134
VE 1340 DATA D0D0D0D0D0D0D000000000000000
   0000E52E73306333632673266433000F4E9EDE5
   00D0D0F825702F6F2561256C357523,5091
JE 1350 DATA 00F3E3EFF200D0D0E93472346D25
   6E32752E732900E8E9E7E800D0D0F400613370
   240034672774330000000000000000,4688
AC 1360 DATA FFFFFFFFFFFFFFFF000004284908
   9018A200BD00E09D0038BD00E19D0039E8D0F1
   A200BD30209D0038E810F7A200BDC0,6112
QD 1370 DATA 269DD038E8E010D0F5A9388DF402
   6002707070460 03A0606060606060606060606
   060606060606060606060606410027,2800
ML 1380 DATA A9008D2F0220D026A2008A9D003A
   9D003BE8D0F7206A27A9388D07D4A9028D1DD0
   A900A20D9DFFCFCAD0FAA9018D6F02,5413
BV 1390 DATA A9008D08D2A9038D0FD2A9008D30
   02A9278D3102A93A8D2F0260A900AA9D003C9D
   003D9D003E9D003FE8D0F160A9008D,4639
VH 1400 DATA 0C06A9D08DAA268DAB26A9028DC8
   024CAD27AD000638ED0C069012AD00068D0C06
   ADA5218DAA26ADA6218DAB26A20186,4625
YO 1410 DATA B8A9D99D4D219D10249D8226A9D0
   9DA5219D9626CA10EAE8861386148E00068E01
   068E0B0660206A27A9208D0427A921,4755
UA 1420 DATA 8D0527A207BD23289DC002CA10F7
   CA8E0306A9008D0506AC0106F024EEA621EE97
   26EE0006ADA621C9DAD00EA9D08DA6,5368
ZE 1430 DATA 218D9726EEA521EE962688D0DF8C
   01064C682800000000BA4C368A00AD8402D04C
   AD0406D008A9018D05064C4B28AE02,4292
HO 1440 DATA 06E005F0389D0606EE0206A9A88D
   01D28D00D2A9148D1C02AD1C02D0FB8D01D28D
   00D2AD8402F0FBAE0306A9009D0022,5052
QM 1450 DATA 8D0406A90E8DFE22A9FE8D030660
   AD0206C905F00BAD7802C90EF005C90DF02060
   AE0306E022F0F8A9009D00228A38E9,5123
CC 1460 DATA 148D0306AAA90E9D0022EE04064C
   CC28AE0306E0FEF0D9A9009D00228A1869148D
   0306AAA90E9D0022CE0406A9148D1C,4315
HY 1470 DATA 02AD1C02D0FB60AD0B06D040A513
   C5B8D03AE6B8E6B8EACE4E21CE1124CE8326AD
   4E21C9CFD014A9D98D4E218D11248D,5959
VC 1480 DATA 8326CE4D21CE1024CE8226AD4D21
   C9D0D00AAD4E21C9D0D0038D0B0660206A27A9
   008D0427A9238D0527A207BDF0209D,4891
UQ 1490 DATA 283DBDF8209D283EBD82299DC002
   CA10EBA9388D01D0A9408D02D0AD0506C903F0
   0EA9C885B0A93885B18D00D04C6B29,5580
BX 1500 DATA A99885B0A9C085B18D00D0A0008C
   0506A6B0B9E8209D003CE8C8C008D0F4208A29
   600E3A3A00B6BAF834A204AD0AD229,5758
BG 1510 DATA 0F9D0E06CA10F5A98085B94CBA29
   A5142980C5B9D041498085B9A204FE0E06BD0E
   06290F9D0E06CA10F2AE0E06BDE829,5099
QX 1520 DATA 8D3223AE0F06BDE8298D3923AE10
   06BDE8298DA723AE1106BDE8298D0824AE1206
   BDE8298D742460424282C282424282,4858
OA 1530 DATA C2C2824282C2C282AD7802C90FF0
   1AA2788E00D2A2248E01D2C90EF015C90DF024
   C90BF033C907F04DA9008D00D28D01,5850
RB 1540 DATA D26020A62A209B2AAD04D02901F0
   F220B62A4C812A20B62A209B2AAD04D02901F0
   DF20A62A4C812A20C62AA5B1C92ED0,5118
JV 1550 DATA 05A9018D0506209B2AAD04D02901
   F0C120CF2A4C812A20CF2AA5B1C9CAD005A903
   8D0506209B2AAD04D02901F0A320C6,4796
FQ 1560 DATA 2AA9088D1C02AD1C028D00D28D01
   D2D0F58D00D28D01D28D1ED060A9018D1C02AD
   1C02D0FB60A200BD013C9D003CE8E0,5111
RO 1570 DATA FFD0F5C6B060A2FFCABD003C9D01
   3CE000D0F5E6B060A6B1CA86B18E00D060A6B1
   E886B18E00D060AD04D02908F066AD,7026
JY 1580 DATA 0AD2297FD05FA9A88D01D2A006A2
   3C8E00D2209B2ACACAE026D0F4A2288E00D220
   9B2AE8E8E03ED0F488D0E18C01D28C,6512
IS 1590 DATA 00D220492B8D1ED0A94085B18D00
   D0A93085B0A9008DC002206B29A51318690 48D
   0D0620D72820412DAD0D06C513D0F3,4604
KB 1600 DATA A90E8DC0028D1ED060A900AA9D00
   3CE8D0FA60A900AA9DF4249D94259D2006E8E0
   A0D0F2A200A9FF9D30259D80259DD0,6229
QY 1610 DATA 259D2026E8E8E014D0EEA201A9D0
   9D5C26A9009D1306E8E00CD0F160A90085BB85
   BCAA9D4826E8E00CD0F86020492B20,6056
WH 1620 DATA 8C2BA9CF8D482685BC60A5BCF040
   ADC106D03BAD7802C90ED006208C2B4C3A2CC9
   0BF005C907F00E60A6BBF021A9009D,5607
MH 1630 DATA 4826CA4CE22BA6BBE00BF012A900
   9D4826E886BBA9CF9D4826A90A8DC10660A5BC
   F0FBAD8402D0F6A6BBD008A9038D05,6242
DC 1640 DATA 064C8C2BA9FF8DC006BD1306F0E0
   E001F013E006F00FE00BF00BDE1306DE5C26A9
   068DC00686BA208C2BA94FA6BA9D48,5638
NL 1650 DATA 26203A2CAD8402F0FB60A9A085B0
   A93085B18D00D0A00084BCA6B0B9B0209D003C
   E8C8C008D0F460A000B90606F013AA,5978
UF 1660 DATA BD1306C909F006FE1306FE5C26C8
   C005D0E8A9008D0206AA9D0606E8E005D0F860
   A200BD4826C94FD008A9409D48264C,5373
WC 1670 DATA 9B2CC940D005A94F9D4826E8E00C
   D0E360206A27A9E08D0427A9248D0527A207BD
   CB2C9DC002CA10F720582C209C2BA9,5320
YL 1680 DATA 008D05068D1ED0EAEAEA600E0000
   00BA4C368AA90538E5BF9007A92485C14CE52C
   A92585C1A6BFBDED2C85C060F4F6F8,5996
TZ 1690 DATA FAFCFE0002040644446484A4C4E50
   525456949698 9A9C9EA0A2A4A6E4E6E8EAECEE
   F0F2F4F6A6BFBD2006AABD342DA8BD,6875
IP 1700 DATA 272DJ1C0A6BF600047480000090A
   0B0A0B8C8D5B003C3C28142828281414000028
   A513CD1F06D07D1869048D1F06A900,3059
NT 1710 DATA 85BFA6BFA90338FD2006B061BD98
   06D02EBD2006C90BF055FE200620D32C20152D
   BD48062903F014DE4806BD48062903,4697
TO 1720 DATA D00AA9029D9806A9089D70064CBD
   2DC903D027A9009D9806A90C9D200620D32C20
   152DA900A00091C0A01491C020A232,4589
EK 1730 DATA A6BFA9029D20064CBD2DFE9806E6
   BFA6BFE028D08F60A5142907D02DA90085BFA6
   BFBD9806F01B20D32CA000B1C049C0,5965
AN 1740 DATA 91C0A014B1C0494091C0A028B1C0
   494091C0E6BFE8E028D0D960A6BFA9009D7006
```

GREEN FINGERS

```
   9D980620D32CA000B1C0098029BF91,6287
ND 1750 DATA C0A014B1C029BF91C0A028B1C029
   BF91C060A5BCD027AD7802C90FF020C90EF020
   C906F019C907F01BC905F01AC90DF0,6287
QV 1760 DATA 19C909F018C90BF01DC90AF01660
   20882E4C692E4C882E20882E4C722E207F2E4C
   722E20692E4C7F2EA5B0C928F0DE4C,4691
QC 1770 DATA A62AA5B0C9A4D004209C2B604CB6
   2AA5B1C92CF0C84CC62AA5B1C9CAF0BF4CCF2A
   A5B185C2A5B085C34CA42EA5B385C2,6892
MC 1780 DATA A5B285C3A5C238E9284A4A4A4A85
   BDA5C338E9284A4A4A4A4A85BE06BEA5BE0A0A
   1865BE1865BD85BF60AD8402D044A5,5727
SU 1790 DATA BCD040A5BAF03C20912EA6BFA5BA
   C901F032C902F02FC903F02CC904F030C905F0
   36C906F03CC907F05FC908F073C909,6329
HV 1800 DATA D0034C862FC90AD0034C942FC90B
   D0034CA82F606060BD2006D0F84CE12FBD2006
   C901D0EE4CE12FBD2006C902D0E44C,5359
MM 1810 DATA E12FA90238FD2006B0D9BD480609
   039D4806BD7006C908D00620FA2D4CDE2FBD20
   06C903D0BD4CE12FBD9806D0B5A907,5187
ON 1820 DATA 38FD2006B0ADBD200638E90BB0A5
   4CE12FBD480609809D4806BD7006C903D00320
   FA2D4CCD2FBD7006C904D00620FA2D,4981
KF 1830 DATA 4CCD2F60BD7006C901F007C902F0
   034CCD2F20FA2D4CCD2FBD2006C90BD0E4EE01
   0620D32CA900A891C0A01491C0A028,5407
EG 1840 DATA 91C0A9029D200620A7324CDE2FAD
   C006300CCEC006D007A90085BA208C2B4C342C
   FE200620D32C20152D4CCD2FA5C5D0,4797
QV 1850 DATA 37A514C980D031AD0AD2290CD02A
   AD0AD2290385C5C901F020C902F01CC903F023
   A90485C5A005AD0AD2291F690585BF,5280
NN 1860 DATA 20313188D0F184C560A98085B3A9
   A085B24C6430AD0AD22907AABD4C3085B2BD54
   3085B3BD5C3085C44C643040608080A0,5811
AH 1870 DATA 406080A02E2E2E2EC8C8C8C80101
   0101FFFFFFFFAD0527C924D012A92085C1A5C5
   C901F009C902F019C903F02960A514,5710
PQ 1880 DATA 2904D007A9B885C04CB530A9C085
   C04CB530A5142902D007A9C885C04CB530A9D0
   85C04CB530A5C41007A9D885C04CB5,6034
MW 1890 DATA 30A9E085C0A6C5BDD1308DC102A5
   B38D01D0A000A6B2B1C09D003DE8C8C008D0F5
   601E0800A5C5F00CC901F00CC902F0,6426
PP 1900 DATA 05C903F0316020E930AD0AD22902
   1869FF1865B2C928F006C9A6F00285B2AD0AD2
   29021869FF1865B3C92CF057C9CAF0,5776
SF 1910 DATA 5385B34C2B31A5142902F00FA5B3
   1865C4C92CF03FC9CAF03B85B3206430209C2E
   A6BFBD200638E905901ABD9806D015,5311
MM 1920 DATA A5C5C903D005BD4806300AA5C59D
   7006A9019D980660AD0CD02902F015EAA5C5C5
   BAD00EA90085C5AD0527C924D0034C,5460
RN 1930 DATA 483460A900AA9D003DE8D0FA8D1E
   D060A5C6D020AD0AD2D01BAD0AD2290785C7AD
   0AD229033865C785C7AABD1306D005,5668
VJ 1940 DATA A90085C760AD0527C924F007DE13
   06DE5C2660BD130638E9B00A0A0AA8A2008A9D
   003FE8D0FAB900E09DB83FC8E8E008,5557
MP 1950 DATA D0F4A5C70A0A0A18693085C8A9FF
   85C985B585C6ADC7028DC302A90E8DC20260A5
   C6F0FBA5B038E9909015A5C7F03AA9,6711
XM 1960 DATA 0185C9A2008A9DB83FE8E008D0F8
   85C7A5C91025C6B5A5B58D02D0C5C8F040A200
   A5B52902F006BD00214C3032BD0821,5910
NM 1970 DATA 9DB03EE8E008D0E960E6B5A5B58D
   02D08D03D085C6A200A5B52902F006BD10214C
   5632BD18219DB03EE8E008D0E960A0,6236
BM 1980 DATA 04A2C4CABD003E9D013EE0B0D0F5
   209B2A88D0EDA5C88D03D0A6C7DE5C26DE1306
   A004A2B0BD013E9D003EBD013F9D00,5762
DV 1990 DATA 3FE8E0C4D0EF209B2A88D0E784C7
   C884C960A90185CE60A90585CF60A90085CAAA
   9D00D2E8E008D0F86020AC32A9FA8D,7012
GC 2000 DATA 1C02AD1C02D0FB206A27A9008D04
   27A93A8D0527A200BD1C339D503ABD30339D8C
   3ABD44339D903BE8E014D0E9A200BD,4938
EM 2010 DATA 91269D1E3BBDA5269D323BE8E007
   D0EFAD8402D0FB20342CA900854D85CD8D1F06
   A90185CA2092272053286000000027,4801
VW 2020 DATA 3225252E0026292E272532330000
   0000A2B900A2A9ACAC80A8A1ACB3A1ACAC8091
   99989670726573730062757474 6F6E,4760
SK 2030 DATA 00746F00706C6179A6CEF0178E00
   D28E01D2E886CEE008D00AA9008D00D28D01D2
   85CEA6CFF019C6CFD00BA9008D00D2,6020
GP 2040 DATA 8D01D24C9033A9288D00D2A9A88D
   01D2ADC106F003CEC106A5CAF018AD1FD0C903
   D007A90085CA4CB733A5CBF019C901,6003
HE 2050 DATA F005C6CB4CF633A2008A9D02D2E8
   E006D0F885CB4CF633A6CD18BD02348D02D269
   018D04D20A8D06D2A9A28D03D28D05,5965
ZH 2060 DATA D28D07D2E8E02FD002A20086CDAD
   822638E9CE0A85CB4C62E4A058A233A9074C5C
   E460555151555560606055551405551,5596
ZS 2070 DATA 6060555151555560606055514055
   516051484040403C40485551484848404 85155
   A200BD2006C903D008A9009D70069D,4024
DY 2080 DATA 9806E8E028D0EC60AD0CD02902F0
   0320A2324C7331202027207D2720F93320BA32
   20722C20D627A9008D00D28D01D2A9,4772
XF 2090 DATA 018D1C02207E28202C28AD0506D0
   1C20ED2F20D53020D728AD0B06D0D120803120
   412DAD1C02D0FB4C6F34201D298D1E,3934
HZ 2100 DATA D0A9018D1C02209E2920D72820F8
   29AD0506C901F0AEC903F01F20D82A20D728AD
   0B06D06220803120ED2F20D5302041,4651
BG 2110 DATA 2DAD1C02D0FB4CA13420A12CA900
   8D00D28D01D2A9018D1C0220AA2B20EF2BAD05
   06D0A720D728AD0B06D02920812C20,4527
YG 2120 DATA 412D20222E20CA2E20C62D20ED2F
   20D5302056312080312 0F031203134AD1C02D0
   FB854D4CE4344C5E3436AD1236A8B1,4310
EP 2130 DATA 43CAE0FFD0F88C383660AD38360A
   0A8D2536A9002A8D26360E25362E2636AD2536
   0D39361869198D2336AD263669008D,4055
YC 2140 DATA 243660A9188D2336A9008D2436AD
   3436CD2336D009AD3536CD2436D00160AD2336
   8D3436AD24368D3536A5438D0403A5,4244
KA 2150 DATA 448D0503AD3636AE2336AC243618
   4CE3358D2B3618654585459002E646AD2B3618
   6D2E368D2E369008EE2F36D003EE30,4215
SG 2160 DATA 36AD2E368D3136AD2F368D3236AD
   30368D333638AD2836ED2B368D2836B003CE29
   36608C0B038E0A038D0103A9528D02,3927
LY 2170 DATA 032053E4AD030330010000000000
   00000000000000000000000000000000000000
   000000000000000000000000000000,574
```

```
MD 10 REM LOAD AND RUN ROUTINE
          FOR GREEN FINGERS
JG 20 OPEN #1,4,0,"D:GREENFIN.OBJ"
OC 30 POKE 850,7:POKE 852,0:POKE 853,32:P
   OKE 856,255:POKE 857,255
SN 40 X=USR(ADR("hhh[illegible]LV[illegible]"),16)
BQ 50 CLOSE #1:X=USR(8232)
```

TYPO 3

NOW RESET PROOF!

Here is an amended version of our TYPO 3 program which we recommend that all readers use when typing in programs. This version is fully compatible with earlier versions but is now 'Reset proof' so that if you press the System Reset key you will not loose the TYPO facility.
If you have already typed in TYPO the changes are shown in the panel below and can simply be added to your original program.

WHAT TYPO IS ALL ABOUT

The program listings in NEW ATARI USER are prepared carefully to ensure that they can be typed in as easily as possible. Before typing any listings ensure that you are familiar with the use of the Shift and CONTROL and INVERSE keys as outlined in your computer manual. The listings are prepared to match exactly what you see on screen. By using TYPO 3 you can ensure that you type in the programs EXACTLY as they are printed. Remember, a single typing mistake may mean a program will not run.

WHAT ARE THOSE CODES?

Each line of a program printed in NEW ATARI USER begins with a special two letter code. THESE SHOULD NOT BE TYPED IN. They are used by the program TYPO to check that you have typed each line correctly. IF YOU HAVE NOT ALREADY TYPED IN THE TYPO 3 LISTING PLEASE DO SO NOW. The program can be used as you type in each line of a program or to check an already typed program. The code for each line will match but if you have problems check the control characters shown in your manual, you are most probably typing a CONTROL character incorrectly. TYPO 3 cannot check whether a line has been missed so if the TYPO codes match and you still have problems in running a listing count the lines in the program and ensure none are missing. If the TYPO codes match, there are no missing lines and the program still does not run, LIST it to cassette or disk using LIST "C:" or LIST "D:filename", switch off the computer, re-boot and then ENTER the program using ENTER "C:" or ENTER "D:filename". Save this version in the normal way.

HOW TO USE TYPO 3

1. Type in the listing carefully for although you can use TYPO 3 to check itself (see 6 below) it may not work if you have made mistakes.
2. SAVE or CSAVE a copy of the program.
3. Each time you want to type in a program listing RUN TYPO 3 first. The program will install a machine code routine in memory and then delete itself. Now type in a line as shown in the magazine excluding the first two letter code and press RETURN.
4. A two letter code will appear at the top left of your screen. If this code matches the one in the magazine carry on and type the next line. Note, the code will not match if you use abbreviations. If you prefer to use abbreviations LIST the line you have just typed, move the cursor to that line and press RETURN. The code should now match.
5. If the code does not match, use the editing keys to correct the line and press RETURN again. Repeat if necessary until the codes match.
6. To check a line you have already typed LIST the line, place the cursor on that line and press RETURN.
7. When you have finished a listing just SAVE or CSAVE it in the normal way.

You can type in a program without using TYPO 3 and then check it by SAVEing or CSAVEing a copy of the program, running TYPO 3 and then LOADing or CLOADing your program and proceeding as in step 6 above.

Always SAVE or CSAVE a program before running it and always use TYPO before telling us that a program will not run.

HOW TO TYPE IN THE LISTINGS *AND GET THEM RIGHT FIRST TIME!*

OUR UNIQUE LINE BY LINE CHECKER WORKS ON ALL ATARI XL/XE and earlier 8-bit machines

```
EI 1 REM ********************************
AL 2 REM *  TYPO III by Alec Benson     *
         *          June 1985           *
SA 3 REM * A proofreader for ANTIC and  *
         *   PAGE 6 based on TYPO II    *
         * published by ANTIC magazine  *
PZ 4 REM *      updated June 1990       *
         *  to include RESET handler    *
         *   Update by:Raphael Espino   *
RP 5 REM *        for NEW ATARI USER    *
         ********************************
NO 9 REM
SG 100 GRAPHICS 0
WG 110 FOR I=1536 TO 1791:READ A:CK=CK+A:
   POKE I,A:NEXT I
PU 120 IF CK<>30765 THEN ? "ERROR IN DATA
    STAMENTS - CHECK TYPING":END
ND 130 A=USR(1536):POKE 9,3:POKE 2,1:POKE
    3,6
XL 140 ? :? "TYPO III IS UP AND RUNNING":
   NEW
MA 1000 DATA 104,160,0,185,26,3,201,69
HG 1010 DATA 240,8,200,200,200,192,36,208
QB 1020 DATA 242,96,200,169,79,153,26,3
RK 1030 DATA 200,169,6,153,26,3,162,0
RR 1040 DATA 189,0,228,157,79,6,232,224
TO 1050 DATA 15,208,245,169,93,141,83,6
KC 1060 DATA 169,6,141,84,6,173,4,228
EU 1070 DATA 105,0,141,95,6,173,5,228
BK 1080 DATA 105,0,141,96,6,169,0,162
KK 1090 DATA 3,149,203,202,16,251,96,0
ZR 1100 DATA 0,0,0,0,0,0,0,0
LD 1110 DATA 0,0,0,0,0,0,32,94
JM 1120 DATA 6,8,72,201,155,240,55,230
TV 1130 DATA 203,133,209,138,72,169,0,133
TW 1140 DATA 208,162,8,10,38,208,6,209
MF 1150 DATA 144,7,24,101,203,144,2,230
RL 1160 DATA 208,202,208,239,133,207,24,1
    65
TM 1170 DATA 204,101,207,133,204,165,205,
    101
AW 1180 DATA 208,133,205,165,206,105,0,13
    3
XH 1190 DATA 206,104,170,104,40,96,138,72
NR 1200 DATA 152,72,162,0,134,207,134,208
GF 1210 DATA 160,24,6,204,38,205,38,206
EA 1220 DATA 38,207,38,208,56,165,207,233
TM 1230 DATA 164,170,165,208,233,2,144,4
SK 1240 DATA 134,207,133,208,136,208,227,
    162
CB 1250 DATA 8,165,207,133,204,165,208,6
XN 1260 DATA 204,42,201,26,144,4,233,26
MB 1270 DATA 230,204,202,208,242,133,205,
    169
BC 1280 DATA 128,145,88,200,192,40,208,24
    9
WV 1290 DATA 165,204,105,160,160,3,145,88
QA 1300 DATA 165,205,24,105,161,200,145,8
    8
MQ 1310 DATA 32,69,6,104,168,76,153,6
```

TYPO 3 - THE CHANGES

If you have typed in our earlier version of TYPO 3 you can simply amend your program by changing line 130 which is the only line changed in the program. Just load in your program, type line 130 as listed above (it will overwrite your existing line) and resave the program.

NO ENTRY!

Program Protection For 8-Bit Atari's by Phil Cardwell

THE BREAK KEY

In the Letters Column of issue 43, Olly Pope asked how to disable the Break Key and System Reset Key. The editor correctly pointed out that to disable the Break key, all that has to be done is to

POKE 16,64:POKE 53774,64

This must be done every time a GRAPHICS command is executed, but how about a routine that needs to be called only once, regardless of the number of times the GRAPHICS mode is changed. Impossible, I hear some of you cry! Well it can done, and fairly easily too.

When the Break Key is pressed the Atari executes an interrupt by jumping through the address that is stored at BRKKY, locations 566 and 567, normally this is $C092 in the XL/XE Operating System ROM. During this interrupt, the computer stores a zero into four locations, thus doing the following:

1. Firstly, BRKKEY at location 17 is cleared. When using BASIC this has the effect of stopping a program. Try typing POKE 17,0
2. SSFLAG, at location 767 is reset to zero to remove any CTRL-1 keypress.
3. The cursor is made visible, if it has been disabled, by clearing location 752, CRSINH.
4. The ATRACT flag at location 77 is cleared, to rid any colour rotation.

Listing 1 shows the Assembly Language program for this. To make the Break Key perform the above, but without stopping program execution, we simply remove the part that tells BASIC to stop the program. Type in Listing 2, run the program and try pressing the Break Key. The DATA statement contains a 12 byte machine language program, that is fully relocatable but remember to put the lo and hi bytes of the start address into locations 566 and 567. The only way out now, is via the emergency exit ... the System Reset key.

The Break Key can also be used, to a limited extent, as a function key. Listing 3 demonstrates this concept by swapping the text colour with the background colour. The more adventurous may like to expand on the original routine, for example to remove all PMG's when a program is stopped, instead of leaving trails of garbage all over the playfield.

A final point to note for Assembly Language programmers. After creating your routine and initialising BRKKY, every time a BRK instruction is encountered the program will jump to your routine.

```
100 ;Procedure For When The BREAK
110 ;Key is pressed
120 ;
130 BRKKEY=$11
140 ATRACT=$4D
150 CRSINH=$02F0
160 SSFLAG=$02FF
170 ;
180       *=$C092
190 ;
200       LDA #$00
210       STA BRKKEY  ;Stop Program
220       STA SSFLAG  ;No CTRL-1
230       STA CRSINH  ;Turn Cursor ON
240       STA ATRACT  ;No ATRACT mode
250       PLA
260       RTI         ;End Interrupt
```

Listing 1

```
EX 1 REM ##################################
RR 2 REM #      BREAK KEY DEMO 1          #
DD 3 REM #      by Phil Cardwell          #
RE 4 REM # NEW ATARI USER - June 1990 #
FB 5 REM ##################################
CT 20 FOR A=1536 TO 1547:READ B:POKE A,B:
   NEXT A
JP 30 DATA 169,0,141,255,2,141,240,2,133,
   77,104,64
MT 40 REM Now Enable Our Break Key Routin
   e
EV 50 POKE 566,0:POKE 567,6
OK 60 REM Small Demo
RG 70 G=0
RB 80 GRAPHICS G:POKE 752,1:POKE 77,128:?
    #6;"TRY PRESSING BREAK"
GN 90 FOR A=1 TO 750:NEXT A
LN 100 G=G+1:IF G=3 THEN G=0
LZ 110 GO TO 80
```

Listing 2

```
EX 1 REM ##################################
ST 2 REM #      BREAK KEY DEMO 2          #
DD 3 REM #      by Phil Cardwell          #
RE 4 REM # NEW ATARI USER - June 1990 #
FB 5 REM ##################################
EH 20 FOR A=1536 TO 1567:READ B:POKE A,B:
   NEXT A
OO 30 REM ** Enable New Routine **
EU 40 POKE 566,0:POKE 567,6
DP 50 DATA 165,203,240,14,198,203,169,0,1
   41,198,2,169,15,141,197,2,104,64
AF 60 DATA 230,203,169,0,141,197,2,169,15
   ,141,198,2,104,64
```

Listing 3

THE SYSTEM RESET KEY

Now comes the difficult bit, to trap the RESET key, well difficult in some respects. System Reset was designed to be the quick way out in case a section of your program went wrong. However, one of the functions of the Reset routine is to check that any 'booted' application is performing normally, regardless of whether it was a disk or cassette boot. During the boot process, three locations in memory are set to tell the Reset routine how to re-initialise the application. Location 9, known as BOOT?, can contain one of four possible values:

```
EX 1 REM ##############################
OP 2 REM #   SIMPLE RESET KEY TRAP    #
DD 3 REM #      by Phil Cardwell      #
RE 4 REM # NEW ATARI USER - June 1990 #
FB 5 REM ##############################
HI 10 POKE 9,3:POKE 2,52:POKE 3,185:TRAP
   1000
IC 20 GRAPHICS 18:POSITION 1,5:? #6;"pres
   s system reset"
KU 30 GO TO 30
MM 1000 RUN
```

Listing 4

```
AE 10 REM *****************************
LM 20 REM * SYSTEM RESET TRAP ROUTINE *
UU 30 REM * ------------------------- *
QH 40 REM * First published in PAGE 6 *
EV 50 REM *    Magazine issue #11.    *
YY 60 REM *      Author unknown.      *
OF 70 REM *     XL/XE revision by     *
SR 80 REM *       Phil Cardwell       *
AM 90 REM *****************************
QM 100 REM
VX 110 DIM R$(57):FOR A=1 TO 57:READ B:R$
   (A,A)=CHR$(B):NEXT A
AA 120 I=ADR(R$):H=INT(I/256):L=I-H*256:P
   OKE 12,L:POKE 13,H:POKE 842,12:GRAPHIC
   S 0
BR 130 GRAPHICS 18:POKE 16,64:POKE 53774,
   64
SB 140 POSITION 6,4:? #6;"protected"
MX 150 POSITION 6,6:? #6;" program"
CP 160 POSITION 1,8:? #6;"PRESS SYSTEM RE
   SET"
SW 170 POKE 710,RND(0)*200
SR 180 IF PEEK(764)=28 THEN 200
OX 190 GOTO 170
WT 200 POKE 12,64:POKE 13,21:? "NOW PRESS
    THE SYSTEM RESET BUTTON":END
AO 300 DATA 169,0,141,197,2,141,198,2,169
   ,64,133,16,141,14,210,169,125,32,176,2
   42,169,2,133,84,169,82,32,176,242
SH 310 DATA 169,85,32,176,242,169,78,32,1
   76,242,169,28,32,176,242,169,28,32,176
   ,242,169,13,141,74,3,76,0,160
```

Listing 5

0 = No peripheral was booted
1 = A disk boot was successful
2 = A cassette boot was successful
3 = Both cassette and disk boots were successful

Locations 2 and 3, or CASINI, handle the address in memory of where to find your Reset button checking routine. So to trap this key, BOOT? must contain 3 and CASINI the address of the Reset handler.

Where do we get this address from? If we can fool BASIC into thinking that an error has occurred when the Reset key is pressed, it will automatically jump to a previously TRAPped line. For 400/800 users the BASIC TRAP statement resides in memory at 47424 ($B940) and on XL/XE's at 47412 ($B934). Type in Listing 4 for a simple solution to the Reset problem.

Line 10 initialises BOOT? to 3, POKE's the LSB/MSB of the TRAP statement into CASINI and sets the line to be TRAPped when the Reset key is pressed. Note; On 400/800 machines the value of 52 should be changed to 64.

Weird and wonderful things can happen here though. Try pressing BREAK immediately after releasing the System Reset key. The result? Access can be gained to your program. Without going too deep, the answer to this problem is machine-code. For the ultimate solution look at listing 5. This originally appeared, uncredited, in issue 11 of PAGE 6 in September/October 1984 and, at that time, wouldn't work on the XL/XE machines. I don't know if a fix appeared in a later issue, but

```
EX 1 REM ##############################
PW 2 REM # CASSETTE LINES FOR RESET   #
DD 3 REM #      by Phil Cardwell      #
RE 4 REM # NEW ATARI USER - June 1990 #
FB 5 REM ##############################
GM 30 I=ADR(R$):H=INT(I/256):L=I-H*256:PO
   KE 9,2:POKE 2,L:POKE 3,H:POKE 42,12:GR
   APHICS 0
VY 300 POKE 9,0:POKE 2,0:POKE 3,0:? "NOW
   PRESS SYSTEM RESET":END
```

Listing 6

```
EX 1 REM ##############################
JO 2 REM # SCRAMBLE VARIABLE TABLE    #
DD 3 REM #      by Phil Cardwell      #
RE 4 REM # NEW ATARI USER - June 1990 #
FB 5 REM ##############################
UZ 32000 DIM CHARACTER$(1):PRINT "Which c
   haracter is to be used to destroy the
   VNT";:INPUT CHARACTER$
EF 32005 IF CHARACTER$="" THEN CHARACTER$
   =CHR$(155)
HQ 32010 FOR VARI=PEEK(130)+PEEK(131)*256
    TO PEEK(132)+PEEK(133)*256
LY 32020 POKE VARI,ASC(CHARACTER$)
AV 32030 NEXT VARI
SR 32040 POKE PEEK(138)+PEEK(139)*256+2,0
   :SAVE "D:PROGNAME.BAS":NEW
```

Listing 7

this enhanced version runs perfectly on XL/XE's.

Rather than give a program breakdown, I'll explain what it does and from then on, you can use it in your own programs. Firstly, the text and text background colours are changed to that of the background, i.e. black. The Break key is disabled, and although you cannot see it, the screen is cleared and RUN is printed to the screen three lines from the top. IOCB #0's Forced-Read mode is then used to press the Return key and finally, the program does a Cold Start to the BASIC cartridge to execute the RUN statement. Pressing the ESC key allows you to exit from the continuous loop. 400/800 users should note that wherever the combination of 176,242 appears in the DATA statements, this should be changed to 164,246.

Cassette users should substitute the lines in listing 6 with those in listing 5.

SOME MORE TRICKS

Should a 'budding hacker' eventually arrive at this stage to try and get round your protection, what else can be done?

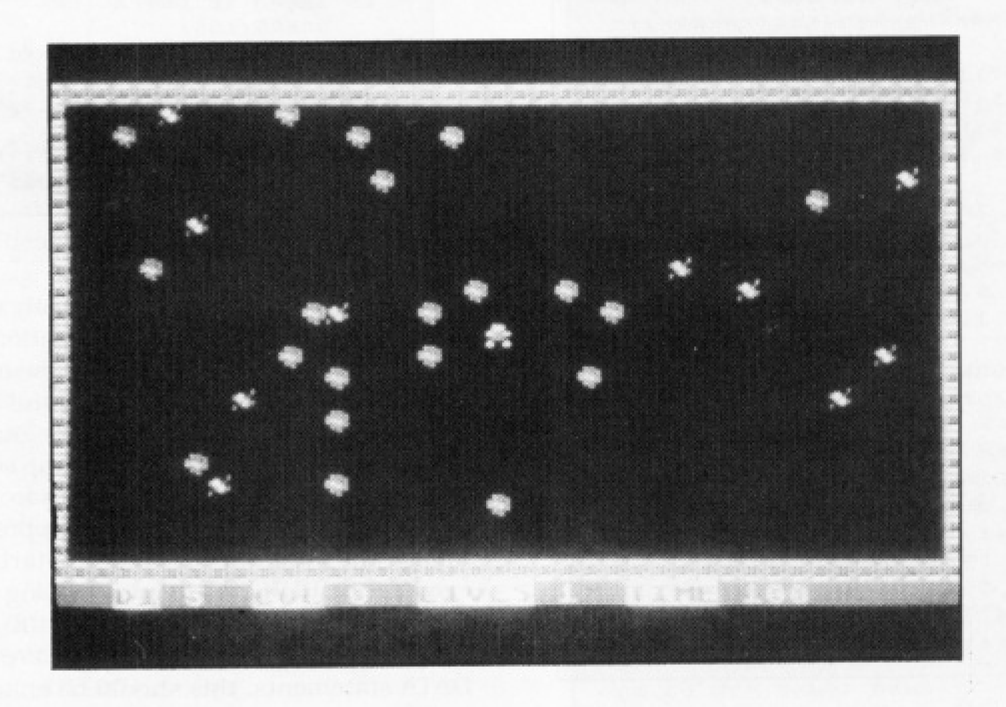
Corruption of the Variable Name Table can make your program somewhat illegible. By finding the start and end of a variable, and using the current statement pointer, we change any variable name to any ATASCII character. Add Listing 7 to the end of your program and type G.32000. You will be asked for a single character to replace all variables with, the Variable Name Table will then become corrupted by this character and a new version of the program is automatically saved. Make sure to SAVE a copy before doing any corruption as there is practically no way to LOAD the program back into memory and list it. Cassette users should use SAVE "C:" to save, and RUN "C:" to load.

Finally, to remove your program from memory but still have it executing normally, type this as the first line of your program:

```
1 POKE 202,1
```

I'm not quite sure what happens, but my theory is as follows. When the Load In Progress flag at location 202 becomes non-zero, BASIC executes its NEW statement, and because no portion of RAM is actually wiped clean, your program remains intact invisibly.

ROBOTS OF NALA



Can you guide your robots round to collect all the gems without getting eaten by something nasty or crashing into one of the many rocks that litter the cavern? It looks quite easy to start with but as the game progresses, the action gets faster and the obstacles get more and more. Only the top players will survive.

Use a joystick in port 1 to move your robot about and collect the flashing diamonds. You have a set amount to collect on each screen which will be shown at the bottom of the screen under 'DI'. The number of diamonds you have collected so far will be shown under 'COL'. You only have a short time to collect them all and when you get the last one the screen will flash and a small exit square will appear. Now you have an even shorter time to reach the exit and if you are far away you might not make it. Strategy plays a part here and the game will be easier if you collect the diamonds in a particular order.

All around the screen are numerous rocks. These are not dangerous in themselves, they just impede progress, but by screen four deadly slime will appear and on screen seven two guards will begin to patrol. Contact with any of these is deadly. By the time you reach screen 9, invisible barriers will make your progress even harder and only the best will survive beyond this level.

The four selectable difficulty levels will pitch you straight in to one of the higher levels. Most players will find enough challenge in the game as it stands but if you want to make it harder and faster try running it with Turbo Basic.

by Derek Thomson

```
WO 1 REM *****************************
ER 2 REM *       ROBOTS OF NALA       *
RT 3 REM *             by             *
AG 4 REM *       Derek Thomson        *
SR 5 REM * -------------------------- *
CV 6 REM * NEW ATARI USER - June 1990 *
WU 7 REM *****************************
NN 8 REM
JO 10 GRAPHICS 12+16:POKE 16,64:POKE 5377
   4,64
MI 20 DL=PEEK(560)+PEEK(561)*256:GOSUB 12
   70:GOSUB 1470
TF 30 REM  SET UP VARIBLES 
YW 40 WA=20:DI=5:PI=41:PI1=168:LIFE=3:SLI
   =10:BLK=20:RN1=5:GH1=1:RN2=5:GV1=1
TW 50 MOV1=1:MOV2=1
XC 60 REM  PRINT SCREEN 
SJ 70 ? #6;"↰":FOR A=0 TO 39:POSITION A,0
   :? #6;"!":POSITION A,22:? #6;"!":NEXT
   A
BU 80 FOR B=1 TO 21:POSITION 0,B:? #6;"!"
   :POSITION 39,B:? #6;"!":NEXT B
TX 90 FOR C=1 TO WA:POSITION INT(RND(0)*3
   8)+1,INT(RND(0)*21)+1:? #6;"#":NEXT C
HO 100 IF LEV>3 THEN FOR E=1 TO SLI:POSIT
   ION INT(RND(0)*38)+1,INT(RND(0)*21)+1:
   ? #6;"$":NEXT E
IB 110 IF LEV>9 THEN FOR F=0 TO BLK:POSIT
   ION INT(RND(0)*38)+1,INT(RND(0)*21)+1:
   ? #6;"@":NEXT F
UM 120 FOR D=1 TO DI+5+CTT:POSITION INT(R
   ND(0)*38)+1,INT(RND(0)*21)+1:? #6;"▨":
   NEXT D
WO 130 FOR SP=10 TO 12:POSITION 18,SP:? #
   6;"   ":NEXT SP
EV 140 FOR D=0 TO 10:SETCOLOR 4,0,15:SOUN
   D 0,D*25,2,15:NEXT D:SOUND 0,0,0,0:SET
   COLOR 4,0,0
GO 150 H1=19:V1=11:H2=H1:V2=V1:TIM=100+TI
   M1
AR 160 SETCOLOR 2,1,4:SETCOLOR 1,8,15:SET
   COLOR 0,5,4
BL 170 POSITION H1,V1:? #6;CHR$(42)
WC 180 REM  MAIN LOOP 
IH 190 S=STICK(0)
AJ 200 IF S=15 THEN POSITION H1,V1:? #6;C
   HR$(42):GOTO 320
CR 210 TI=1
DT 220 IF S=14 THEN LOCATE H2,V2-1,X:IF X
   =32 OR X=36 OR X=38 OR X=165 THEN V2=V
   1-1:GOTO 260
FT 230 IF S=7 THEN LOCATE H2+1,V2,X:IF X=
   32 OR X=36 OR X=38 OR X=165 THEN H2=H1
   +1:GOTO 260
VE 240 IF S=13 THEN LOCATE H2,V2+1,X:IF X
   =32 OR X=36 OR X=38 OR X=165 THEN V2=V
   1+1:GOTO 260
MD 250 IF S=11 THEN LOCATE H2-1,V2,X:IF X
   =32 OR X=36 OR X=38 OR X=165 THEN H2=H
   1-1
AG 260 POSITION H1,V1:? #6;CHR$(32)
KM 270 POSITION H2,V2:? #6;CHR$(PI)
PC 280 H1=H2:V1=V2:POKE 77,0
UU 290 IF X=36 THEN 730
WM 300 IF X=38 THEN 660
RD 310 IF X=165 THEN GOSUB 400
ZJ 320 PI=PI+1:IF PI=44 THEN PI=42
NL 330 IF LEV>6 THEN GOSUB 450
XC 340 IF TI=1 THEN TIM=TIM-1:IF TIM=-1 T
   HEN 730
SZ 350 IF TIM<=50 THEN SOUND 3,TIM,10,8
XZ 360 POSITION 3,23:? #6;"DI ";DI;"  COL
   ";CT;"  LIVES ";LIFE;"  TIME ";TIM;"
   "
TX 370 POKE 711,PEEK(20):IF STRIG(0)=0 TH
   EN GOSUB 790
PT 380 GOTO 190
AJ 390 REM WHAT HAS HE GOT
JR 400 FOR D=0 TO 5:SOUND 0,D*30,10,15:NE
   XT D:CT=CT+1:SC=SC+5:SOUND 0,0,0,0
QZ 410 IF CT>=DI AND SS=0 THEN POSITION 1
   9,11:? #6;"&":SETCOLOR 4,0,15:FOR D=0
   TO 10:NEXT D:SETCOLOR 4,0,0:SS=1:T2=1
BN 420 IF T2=1 THEN TIM=20
PT 430 X=32:RETURN
CF 440 REM  MOVE GUARDS 
WF 450 ON MOV1 GOSUB 570,590
OK 460 POSITION GH1,RN1:IF Z1<168 THEN ?
   #6;CHR$(Z1)
FV 470 IF HO1=1 THEN RN1=INT(RND(0)*21)+1
   :HO1=0
PK 480 LOCATE GH2,RN1,Z1:POSITION GH2,RN1
   :? #6;CHR$(PI1):GH1=GH2
OK 490 ON MOV2 GOSUB 610,630
ZB 500 POSITION RN2,GV1:IF Z2<168 THEN ?
   #6;CHR$(Z2)
SY 510 IF HO2=1 THEN RN2=INT(RND(0)*38)+1
   :HO2=0
AG 520 LOCATE RN2,GV2,Z2:POSITION RN2,GV2
   :? #6;CHR$(PI1):GV1=GV2
TU 530 PI2=PI2+1:IF PI2=2 THEN PI1=PI1+1:
   PI2=0:IF PI1=170 THEN PI1=168
AB 540 IF H2=GH2 AND V2=RN1 THEN Z1=32:PO
   P :GOTO 730
HM 550 IF H2=RN2 AND V2=GV2 THEN Z2=32:PO
   P :GOTO 730
ZN 560 RETURN
CA 570 GH2=GH1+1:IF GH1=38 THEN MOV1=2:HO
   1=1
ZR 580 RETURN
KV 590 GH2=GH1-1:IF GH1=1 THEN MOV1=1:HO1
   =1
ZC 600 RETURN
QE 610 GV2=GV1+1:IF GV1=21 THEN MOV2=2:HO
   2=1
ZG 620 RETURN
FY 630 GV2=GV1-1:IF GV1=1 THEN MOV2=1:HO2
   =1
ZK 640 RETURN
MB 650 REM MOVE TO NEXT LEVEL
HX 660 WA=WA+15:DI=DI+5:CT=0:LEV=LEV+1:SS
   =0:RN1=5:GH1=1:RN2=5:GV1=1:TI=0:HO1=0:
   HO2=0
XL 670 SOUND 3,0,0,0
FI 680 FOR D=0 TO 10:SETCOLOR 4,0,15:SOUN
   D 0,D*25,2,15:NEXT D:SOUND 0,0,0,0:SET
   COLOR 4,0,0
KF 690 IF LEV>4 THEN SLI=SLI+5
TC 700 IF LEV>10 THEN BLK=BLK+5
SD 710 T2=0:TIM1=TIM1+70:GOTO 70
BJ 720 REM LOSE A LIFE
XE 730 SOUND 3,0,0,0
IB 740 LIFE=LIFE-1:FOR D=255 TO 0 STEP -1
   7:SOUND 1,D,10,15:POKE 712,D:SOUND 1,0
   ,0,0:NEXT D
PC 750 CT=0:SS=0:RN1=5:GH1=1:RN2=5:GV1=1:
   TI=0:HO1=0:HO2=0:T2=0
MO 760 IF LIFE=0 THEN POP :GOTO 1120
SE 770 GOTO 70
MC 780 REM  GAME PAUSED 
```

continued

ROBOTS of NALA

```
GF 790 POSITION 0,23:? #6;"   GAME PAUSE
   D PRESS FIRE TO PLAY.  "
IA 800 FOR D=0 TO 10:NEXT D
HI 810 POSITION 0,23:? #6;"   GAME PAUSE
   D PRESS FIRE TO PLAY.  "
IE 820 FOR D=0 TO 10:NEXT D
VO 830 IF STRIG(0)=0 THEN POSITION 0,23:?
   #6;"
        ";:RETURN
RY 840 GOTO 790
NQ 850 REM  REDEFINE CHARACTERS 
UT 860 CH=(PEEK(106)-8)*256:CHORG=(PEEK(7
   56)*256):FOR I=0 TO 511:POKE CH+I,PEEK
   (CHORG+I):NEXT I
MD 870 FOR J=0 TO 7:READ D:POKE CH+(ASC("
   !")-32)*8+J,D:NEXT J:REM WALLS
OC 880 DATA 85,105,65,125,125,65,105,85
MO 890 FOR J=0 TO 7:READ D:POKE CH+(ASC("
   #")-32)*8+J,D:NEXT J:REM ROCKS
OQ 900 DATA 60,63,247,239,251,55,60,12
SF 910 FOR J=0 TO 7:READ D:POKE CH+(ASC("
   $")-32)*8+J,D:NEXT J:REM SLIME
SV 920 DATA 16,70,24,105,38,164,18,8
TW 930 FOR J=0 TO 7:READ D:POKE CH+(ASC("
   %")-32)*8+J,D:NEXT J:REM DIAMONDS
CR 940 DATA 3,51,236,236,59,59,204,192
UN 950 FOR J=0 TO 7:READ D:POKE CH+(ASC("
   &")-32)*8+J,D:NEXT J:REM TRANSPORTER
PK 960 DATA 85,105,105,125,125,105,105,85
LV 970 FOR J=0 TO 7:READ D:POKE CH+(ASC("
   *")-32)*8+J,D:NEXT J:REM MAN 1
IZ 980 DATA 60,40,60,190,60,60,195,130
QC 990 FOR J=0 TO 7:READ D:POKE CH+(ASC("
   +")-32)*8+J,D:NEXT J:REM MAN 2
RL 1000 DATA 60,40,56,60,190,60,60,40
MU 1010 FOR J=0 TO 7:READ D:POKE CH+(ASC(
   ")")-32)*8+J,D:NEXT J:REM GUARD 1
YI 1020 DATA 195,195,85,40,40,85,195,195
OF 1030 FOR J=0 TO 7:READ D:POKE CH+(ASC(
   "(")-32)*8+J,D:NEXT J:REM GUARD 2
SW 1040 DATA 0,0,85,40,40,85,0,0
RH 1050 FOR J=0 TO 7:READ D:POKE CH+(ASC(
   "@")-32)*8+J,D:NEXT J:REM BLANK
AH 1060 DATA 0,0,0,0,0,0,0,0
SB 1070 FOR J=0 TO 7:READ D:POKE CH+(ASC(
   "'")-32)*8+J,D:NEXT J:REM ARROW
WC 1080 DATA 8,12,6,255,255,6,12,8
JS 1090 POKE 756,CH/256
AB 1100 RETURN
MD 1110 REM  END OF GAME 
XU 1120 ? #6;CHR$(125):POKE DL+28,4
TO 1130 POKE DL+6,7:POKE DL+10,6:POKE DL+
   12,6:POKE DL+17,6:POKE DL+19,6:POKE DL
   +26,7
GG 1140 IF SC>=HISC THEN HISC=SC
MO 1150 POSITION 3,1:? #6;"ALL ROBOTS LOS
   T"
LS 1160 POSITION 25,4:? #6;"LAST SCORE"
QR 1170 POSITION 8,6:? #6;SC
MB 1180 POSITION 25,10:? #6;"HIGH SCORE"
LJ 1190 POSITION 8,12:? #6;HISC
NN 1200 POSITION 25,18:? #6;"PRESS FIRE"
BL 1210 POKE 708,PEEK(20):SOUND 2,PEEK(20
   ),8,13:SOUND 3,PEEK(20),10,15
PQ 1220 IF STRIG(0)<>0 THEN 1210
YA 1230 SOUND 2,0,0,0:SOUND 3,0,0,0:? #6;
   CHR$(125):SC=0
TQ 1240 POKE DL+6,4:POKE DL+10,4:POKE DL+
   12,4:POKE DL+17,4:POKE DL+19,4:POKE DL
   +26,4
TP 1250 TIM1=0:GOSUB 1470:GOTO 30
CR 1260 REM  TITLE SCREEN 
YR 1270 POKE DL+6,7:POKE DL+8,6:POKE DL+1
   0,6
OR 1280 POKE 708,16:POKE 709,126:POKE 710
   ,0:POKE 711,54
ZI 1290 POSITION 3,1:? #6;"ROBOTS OF NALA
   "
ED 1300 POSITION 29,2:? #6;"by"
IY 1310 POSITION 6,4:? #6;"d.thomson"
ZG 1320 FOR Q=12 TO 26:POKE DL+Q,2:NEXT Q
   :POKE DL+28,6
FD 1330 POSITION 35,5:? #6;"HOW TO PLAY"
OH 1340 POSITION 21,6:? #6;"YOU HAVE THRE
   E  ROBOTS  WHICH  HAVE TO  COLLECT  A
   SET  AMOUNT OF  DIAMONDS ON  EACH ";
FA 1350 ? #6;"SCREEN.  THIS  IS  DONE BY
    GOING  OVER  THEM. YOU  HAVE A  SHORT
    TIME TO  COLLECT THEM ";
RH 1360 ? #6;"BUT ONCE THIS IS DONE THE
   SCREEN WILL FLASH AND THE TIME WILL GO
     TOO 20 AND A SMALL  SQUARE ";
VX 1370 ? #6;"WILL APPEAR  WHICH YOU HAVE
    TO  GET  TOO.  YOU WILL  ALSO  LOSE A
     ROBOT  IF YOU  GO ON THE  SLIME ";
DL 1380 ? #6;",OR  THE GUARDS  GET  YOU.
   THERE  ARE ALSO ROCKS AND INVISIBLE  B
   ARRIERS  TO STOP YOU FROM MOVING."
XM 1390 POSITION 24,21:? #6;"PLEASE WAIT"
CU 1400 GOSUB 860:POSITION 21,21:? #6;"pr
   ess fire to play"
FZ 1410 IF STRIG(0)=0 THEN 1430
PL 1420 GOTO 1410
GD 1430 ? #6;CHR$(125):POKE DL+6,4:POKE D
   L+8,4:POKE DL+10,4:POKE DL+28,2
LP 1440 FOR Q=12 TO 26:POKE DL+Q,4:NEXT Q
AW 1450 RETURN
YK 1460 REM  SELECT LEVEL 
XO 1470 ? #6;"K":SEL=4:POKE DL+6,6:FOR Q=
   9 TO 20:POKE DL+Q,6:NEXT Q:POKE DL+24,
   2:POKE DL+28,4
PL 1480 SETCOLOR 2,1,4:SETCOLOR 1,8,15:SE
   TCOLOR 0,5,4
RV 1490 POSITION 4,1:? #6;"SELECT LEVEL"
WZ 1500 POSITION 8,4:? #6;"easy"
AY 1510 POSITION 7,5:? #6;"medium"
DT 1520 POSITION 8,6:? #6;"hard"
QT 1530 POSITION 7,7:? #6;"harder"
PZ 1540 POSITION 1,9:? #6;"press fire to
   play"
CT 1550 POSITION 23,12:? #6;"DIAMOND  ROC
   K  SLIME  GUARD  ROBOT"
HU 1560 POSITION 26,14:? #6;"%       #
     $     )       *"
QP 1570 S=STICK(0)
ZW 1580 POKE 711,PEEK(20)
RN 1590 IF S=13 THEN SEL=SEL+1:IF SEL=8 T
   HEN SEL=4
AP 1600 POSITION 6,SEL:? #6;"'"
MR 1610 FOR D=0 TO 10:NEXT D
TO 1620 POSITION 6,SEL:? #6;" "
ZQ 1630 IF STRIG(0)<>0 THEN 1570
BI 1640 ? #6;"K":POKE DL+6,4:FOR Q=9 TO 2
   0:POKE DL+Q,4:NEXT Q:POKE DL+24,4:POKE
    DL+28,2
DM 1650 IF SEL=4 THEN LEV=1
GW 1660 IF SEL=5 THEN LEV=4
KG 1670 IF SEL=6 THEN LEV=7
ZM 1680 IF SEL=7 THEN LEV=10
BM 1690 RETURN
```

COME AND SEE
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AT
ATARI '90
NOVOTEL HOTEL
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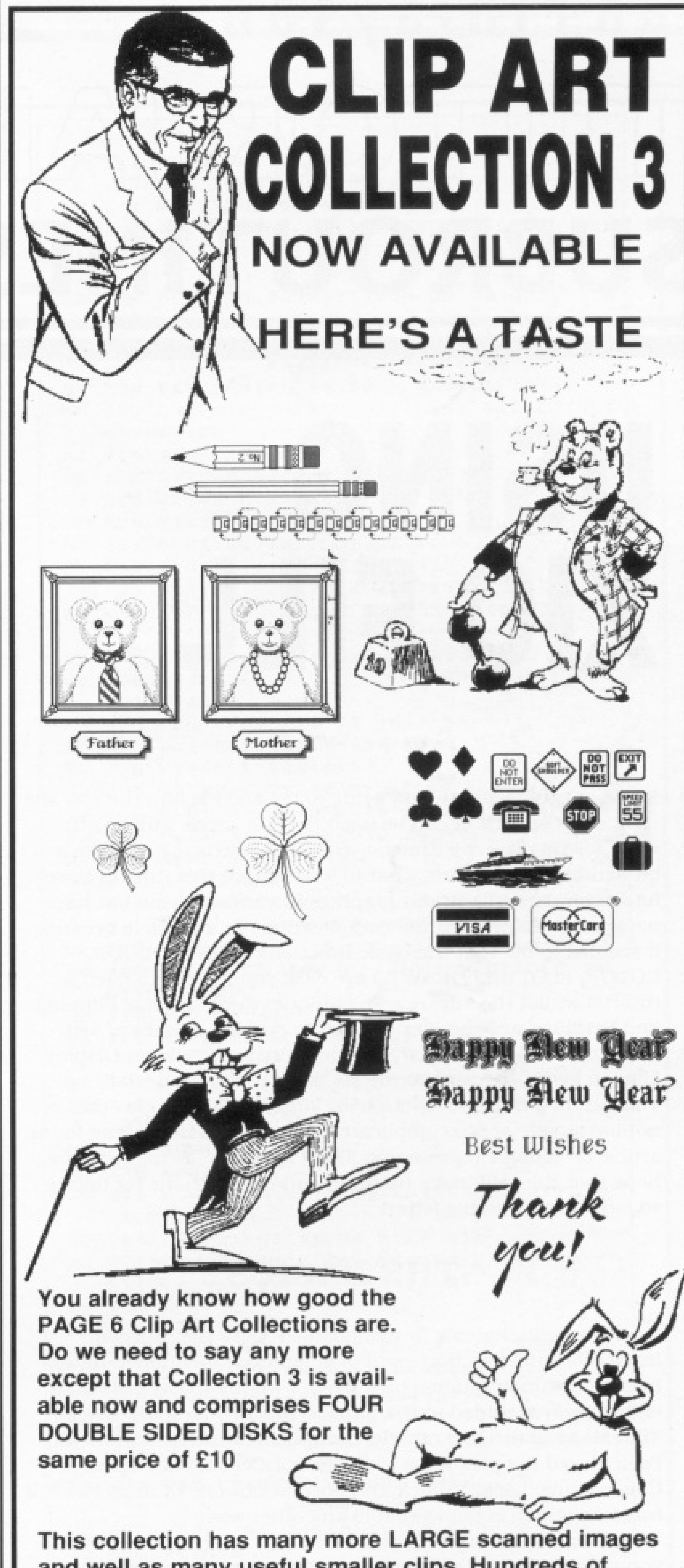
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Ian Finlayson's

TUTORIAL SUBROUTINES

USING XIO FILL

For this edition I am going to try and explain the way the XIO function can be used to fill in areas with colour when you are drawing graphic screens. I had quite a bit of difficulty deciding what to write about this time - I have had several queries about graphics in various forms but have never really addressed the complications in an article because it seemed to me that the basic functions of SETCOLOUR, COLOR, PLOT and DRAWTO are easy enough not to need a tutorial whilst the advanced techniques such as Page Flipping and Scrolling are complex enough to require a series of articles. Look at Andrew Weir's comprehensive article on Display Lists in Issue 43 - a major thesis rather than a tutorial! Thanks then to Lee Colclough for suggesting a subject that is not too simple or too complicated. He wrote to me asking for an article on filling shapes using XIO. I mention his name in the hope that this will make him less annoyed with me for taking so long to reply to his letter!

THE BASICS

Atari Basic includes a function called XIO - the "Special Input/Output" function - which is not even mentioned in the meagre documentation which came with my trusty 800XL. It is, however, included in the handbook of my long deceased 400. Many of the XIO functions duplicate functions that can be achieved in other ways in Basic or DOS such as Open, Close, Draw, Lock, Unlock and Format but one of them is a Fill function which is not available any other way.

The fill command is a bit particular and fiddly to deal with as you will see, but when used correctly it is quite quick. It has some major limitations, for instance it can only fill background colour (Color zero) with one of the three other colours available in 4 colour modes (only 1 in two colour modes). It cannot cover one colour with another or wipe out colours by filling with background (zero). Also it always fills from left to right so it is quite easy to fill shapes with uneven right hand edges, but more complicated to fill those with uneven left hand edges.

The form of the command is:

```
XIO 18,#6,0,0,"S:"
```

18 is the fill command, #6 is the device that the I/O is outputting to (the screen), the two zeros are dummy variables required by the command syntax, and "S:" is the filespec. In the Fill command the filespec is not used, but like the zeros it must be there to keep the syntax correct.

Actual use of the command is best explained by examples, so I have drawn up a set of examples in the program listing and I will explain what I am trying to illustrate with each in turn.

THE FIRST ILLUSTRATION

This is the simplest example of the XIO fill and I will go through it in some detail.

Line 20 selects Graphics mode 5 and Color 1. I chose Graphics mode 5 as a fairly bold mode so that the features we wish to look at stand out clearly. Color 1 is the colour that is used to draw the figures, it is a pink or red default colour unless changed by a SETCOLOR command.

Line 22 Draws a vertical line up the screen.

Line 24 Positions the cursor well to the left of the line which has been drawn, then does a GOSUB to the XIO fill which is in a subroutine at line 500

THE XIO SUBROUTINE

Line 500 is the XIO subroutine itself. It is called in each of the examples. The POKE 765,2 selects Color 2 for the Fill by POKEing this number into the memory register at location 765. In a four colour mode you can poke 1,2 or 3 in here (not background colour). Next XIO is invoked and in this, the easiest case, you can clearly see what happens, as follows. A line is drawn from the position where the last drawn line or point finished (50,10) to the point where the cursor is currently positioned (20,20) in the same colour as the previously drawn lines, and the fill is carried out from this line to the right until a non zero colour is reached. In this case the shape is triangular. Note that the XIO fill does not complete the line across the bottom of the fill colour, and it does not fill down to the bottom of the original vertical line - only to the level of the POSITION statement from which the fill was called.

For this tutorial I have added a delay to the fill routine so that after a fill the program waits for a keypress, and displays a prompt in the text window of the screen. This is so you can see the results of the current fill before going on to the next example.

ILLUSTRATIONS TWO and THREE

The next two examples are very similar to the first but show that the fill proceeds just as effectively when the first line is extended horizontally to the left or diagonally up to the left.

FOURTH ILLUSTRATION

This example shows the main problem with the XIO fill. If the drawn line is extended diagonally down to the left the fill will start at the level of the line end leaving a blank space at the top of the figure.

```
WO 1 REM ****************************
CR 2 REM *     TUTORIAL SUBROUTINES    *
VJ 4 REM *           XIO FILL          *
XU 5 REM *              by             *
CO 6 REM *        Ian Finlayson        *
OG 7 REM *---------------------------*
DN 8 REM * NEW ATARI USER - JUNE 1990 *
WW 9 REM ****************************
AY 10 REM
ZM 19 REM **** 1ST ILLUSTRATION ****
      ****************
LY 20 GRAPHICS 5:COLOR 1:? "           1ST
   ILLUSTRATION              "
ET 22 PLOT 50,30:DRAWTO 50,10
OC 24 POSITION 20,20:GOSUB 500
OC 29 REM **** 2ND ILLUSTRATION ****
      ****************
RC 30 GRAPHICS 5:? "           2ND ILLUSTRA
   TION            "
HH 32 PLOT 50,30:DRAWTO 50,10:DRAWTO 30,1
   0
OD 34 POSITION 20,20:GOSUB 500
QU 39 REM **** 3RD ILLUSTRATION ****
      ****************
WM 40 GRAPHICS 5:? "           3RD ILLUSTRA
   TION            "
AC 42 PLOT 50,30:DRAWTO 50,10:DRAWTO 35,5
OE 44 POSITION 20,20:GOSUB 500
US 49 REM **** 4TH ILLUSTRATION ****
      ****************
EE 50 GRAPHICS 5:? "           4TH ILLUSTRA
   TION            "
DT 52 PLOT 50,30:DRAWTO 50,10:DRAWTO 35,5
   :DRAWTO 20,10
OF 54 POSITION 20,20:GOSUB 500
VG 59 REM **** 5TH ILLUSTRATION ****
      ****************
FG 60 GRAPHICS 5:? "           5TH ILLUSTRA
   TION            "
AE 62 PLOT 50,30:DRAWTO 50,10:DRAWTO 35,5
NQ 64 POSITION 20,10:GOSUB 500
RL 66 PLOT 20,10:POSITION 20,35:GOSUB 500
VU 69 REM **** 6TH ILLUSTRATION ****
      ****************
GI 70 GRAPHICS 5:? "           6TH ILLUSTRA
   TION            "
PE 72 PLOT 70,30:DRAWTO 70,5
QD 74 POSITION 50,8:GOSUB 500
PB 76 PLOT 50,8:POSITION 35,12:GOSUB 500
OM 78 PLOT 35,12:POSITION 20,20:GOSUB 500
LF 80 PLOT 20,20:POSITION 10,30:GOSUB 500
WJ 89 REM **** 7TH ILLUSTRATION ****
      ****************
HL 90 GRAPHICS 5:? "           7TH ILLUSTRA
   TION            "
YC 92 PLOT 70,30:DRAWTO 70,5:DRAWTO 10,5
OS 94 POSITION 20,8:GOSUB 500
OC 96 PLOT 20,8:POSITION 35,12:GOSUB 500
QK 98 PLOT 35,12:POSITION 40,20:GOSUB 500
BX 100 PLOT 40,20:POSITION 50,30:GOSUB 50
   0
RI 109 REM **** 8TH ILLUSTRATION ****
       ****************
QX 110 GRAPHICS 5:? "          8TH ILLUSTR
   ATION            "
LM 112 PLOT 70,30:DRAWTO 70,25:PLOT 70,20
   :DRAWTO 70,5:DRAWTO 10,5
AK 114 POSITION 20,8:GOSUB 500
ZC 116 PLOT 20,8:POSITION 35,12:GOSUB 500
DE 118 PLOT 35,12:POSITION 40,20:GOSUB 50
   0
CB 120 PLOT 40,20:POSITION 50,30:GOSUB 50
   0
QQ 199 REM *** CIRCLE ILLUSTRATION 1 ***
       ********************
QK 200 REM CENTRE 40,20 - RADIUS 18
XH 205 GRAPHICS 5:? "        1ST CIRCLE ILL
   USTRATION        "
XI 210 DEG :FOR A=0 TO 90 STEP 3
MD 220 X=18*COS(A):Y=18*SIN(A)
WZ 225 X1=40-X:X2=40+X
WM 230 Y1=20-Y:Y2=20+Y
DY 235 PLOT X1,Y2:PLOT X2,Y2
BY 240 PLOT X1,Y1:PLOT X2,Y1
JD 245 NEXT A:POSITION 22,20:GOSUB 500
RO 249 REM *** CIRCLE ILLUSTRATION 2 ***
       ********************
QU 250 REM CENTRE 40,20 - RADIUS 18
DA 255 GRAPHICS 5:? "        2ND CIRCLE ILL
   USTRATION        "
XS 260 DEG :FOR A=0 TO 90 STEP 3
NA 265 X=18*COS(A):Y=18*SIN(A)
WU 270 X1=40-X:X2=40+X
XJ 275 Y1=20-Y:Y2=20+Y
SJ 280 PLOT X1,Y2:DRAWTO X2,Y2
RJ 285 PLOT X1,Y1:DRAWTO X2,Y1
DI 290 NEXT A
TY 295 GOSUB 510
TF 299 REM *** CIRCLE ILLUSTRATION 3 ***
       ********************
QL 300 REM CENTRE 40,20 - RADIUS 18
HQ 305 GRAPHICS 5:? "        3RD CIRCLE ILL
   USTRATION        "
ME 310 DEG :A=-90
GQ 320 X=40+18*COS(A):Y=20+18*SIN(A):PLOT
    X,Y
AI 325 FOR A=-80 TO 90 STEP 10
IV 330 X1=40+18*COS(A):Y1=20+18*SIN(A):DR
   AWTO X1,Y1
CZ 340 NEXT A
MC 350 A=270
GY 360 X=40+18*COS(A):Y=20+18*SIN(A):PLOT
    X,Y
YO 365 FOR A=260 TO 90 STEP -10
VQ 370 X1=40+18*COS(A):Y1=20+18*SIN(A):PO
   SITION X1,Y1:GOSUB 550:PLOT X1,Y1
DH 380 NEXT A
PJ 498 END
GE 499 REM **** FILL & KEYPRESS ****
       ****************
FP 500 POKE 765,2:XIO 18,#6,0,0,"S:"
OE 510 ? "      PRESS ANY KEY TO CONTINUE"
IH 520 OPEN #1,4,0,"K:":GET #1,K:CLOSE #1
   :RETURN
IN 549 REM **** FILL ONLY ****
       *********
FZ 550 POKE 765,2:XIO 18,#6,0,0,"S:"
ZN 560 RETURN
```

FIFTH ILLUSTRATION

Here we show how to fill the top area of the figure. The top part is filled by stopping the line drawing at the apex of the figure and then letting the fill routine itself create a line sloping down to the left. The "house" shape can then be completed by a second fill of the rectangular bottom part. I deliberately put the bottom left POSITION below the starting point on the right to show what happens if the fill does not encounter a non-zero colour somewhere across the screen. It continues to fill with colour to the right edge of the screen and then from the left hand edge until it gets back to the starting line.-

ILLUSTRATIONS SIX and SEVEN

These two examples show how figures can be drawn and filled even if the left hand edge is curved. Both convex and concave curves are illustrated. It is simply a question of breaking the figure down into strips each of which has a straight line as its left edge. By making the strips thin an impression of a curved line can be drawn. In Graphics 5 of course the curves look quite jagged, but they are smoother in higher graphics modes.

continued

TUTORIAL SUBROUTINES continued

EIGHTH ILLUSTRATION

Here I have redrawn the 7th figure but, rather like the 5th example, I have left a gap in the line drawn on the right of the figure to show how the fill "leaks" through and wraps back on the left to its starting point.

CIRCLE ILLUSTRATION 1

I am using a circle as an example of a figure with a curved outline. This first illustration shows the problem - you cannot just draw the outline and then fill it using XIO.

CIRCLE ILLUSTRATION 2

This illustration does not use the XIO fill at all, but does show another way of achieving a solid figure. Instead of drawing the outline of the circle a series of lines are drawn from the calculated left edge to the right edge of the circle thus making a solid figure out of a stack of lines.

CIRCLE ILLUSTRATION 3

Finally a demonstration of a fill of a circle using XIO. First the right hand side of the circle is drawn. Next the left side of the circle is created as a series of short straight lines drawn by the XIO function as it fills the circle. If you examine the listing carefully you will see what is being done. The circle is broken into slices then a repeated series of small fills is carried out using a FOR - NEXT loop. This is just the same principle that we used in illustrations 6 and 7 but with more smaller segments to give a smoother curve. You can see this more clearly if the program stops after each step, and this can be done by changing the GOSUB 550 in line 370 to "GOSUB 500".

I hope that this explanation helps you to use XIO effectively in your own programs. Don't be afraid to experiment, and don't be surprised if you get some unexpected results at times! Nothing much can go wrong, but if you inadvertently do an XIO fill with colour 0 and there is no coloured line on screen to provide a right hand edge the computer will go into an endless loop and nothing seems to be happening. The only way out is by pressing RESET, but your program should still be intact and can be run again once the error is corrected.

As always I welcome your letters, queries on BASIC programs and comment. Write with a stamped return envelope to:

Ian Finlayson
60 Roundstone Crescent,
East Preston,
West Sussex,
BN16 1DQ

FLYIN



Like many fans of Sublogic's superb Flight Simulator II (FS2) I've often toyed with the idea of taking up flying for real. I never actually got round to it though, but I'm going to tell you about someone who did!

In May 1987 John Waller, a 63 year old retired lecturer from Davyhulme, Manchester, discovered the joys of FS2 on his son's ST. He was so enthralled by it that he bought his own ST and copy of FS2. Then, like most would-be FS2 pilots, he discovered that flying it properly wasn't as easy as it looked, so he borrowed books on flying from his local library. This not only gave John the basic knowledge he needed, but also sparked off ideas for improving the realism of FS2.

Before long he'd designed and hand built some realistic aircraft controls which would link to FS2's program controls. These included a control yoke with full movement to operate the aircraft's elevators and ailerons, throttle, carburettor heat, and elevator trim controls. He also constructed some rudder pedals complete with toe brakes, but these haven't been completely successful so far and need a little more development work. He's planning further additions too, including flap and undercarriage controls.

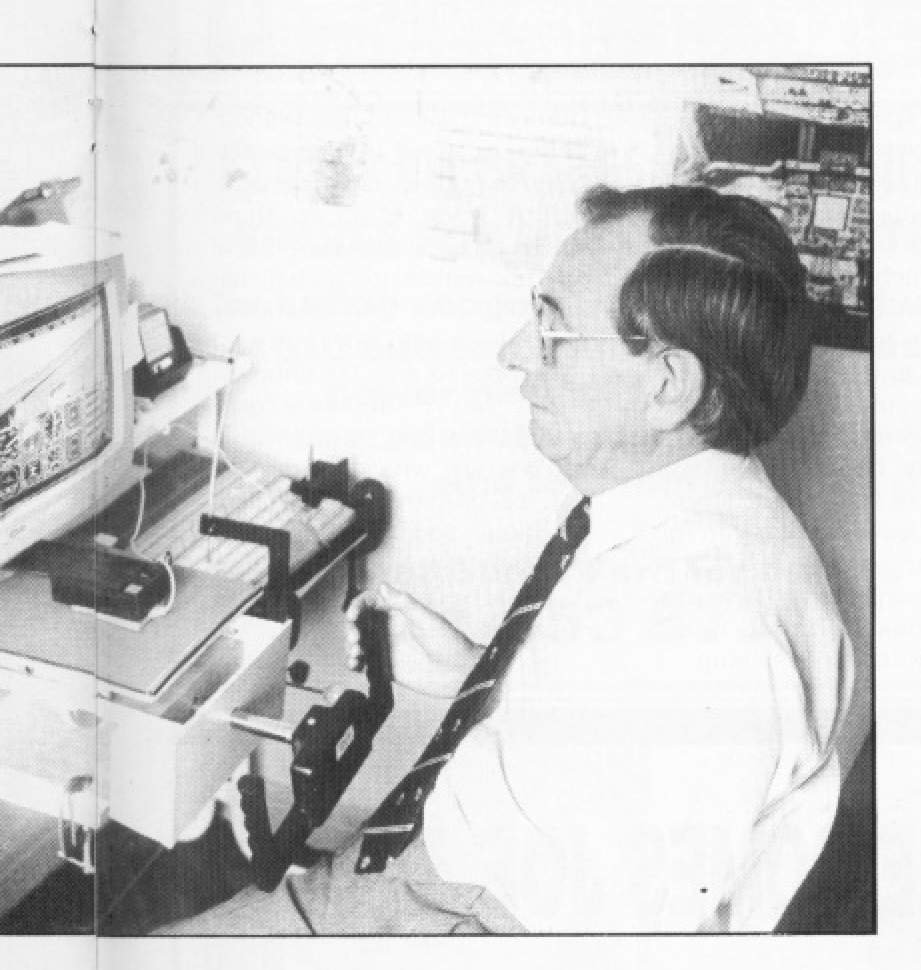
THE REAL THING!

Eventually the inevitable happened. Like the rest of us, John thought he'd like to learn to fly for real, so he booked a trial lesson with the Lancashire Aero Club at Barton Airfield, rapidly followed by a course of real lessons. Three months later he went solo - in about half the time normally taken by student pilots of his age group. He's convinced this was due to his experience with FS2! By July of the following year he completed all his tuition, tests, and exams necessary to gain him the coveted Private Pilot's Licence. Shortly afterwards he joined a flying group and become part owner of a Cessna 172, clocking up around 100 hours flying time to date.

But recently disaster struck! Unfortunately, you can't turn off "crash detect" on a real Cessna as you can in FS2, and someone (not John, I hasten to add!) crashed it while landing. Perhaps the pilot should have practised with FS2 before flying the real thing! The aircraft was a total writeoff, so John has now joined another group - flying a Cessna 152 this time.

Even though he's earned his pilot's licence John still enjoys

NG FOR REAL



John S Davison discovers someone whose obsession for a computer program lead to great heights



flying FS2, mainly because its level of realism makes it a natural aid for navigation practice. Its facilities for setting wind speeds, wind directions, and cloud levels allow you to try out most types of visual or instrument flying and navigation procedures found in real life. John also says that flying FS2 is much cheaper than practising in his flying club's simulator, which costs almost as much to hire as a real aircraft!

LOOK, NO ELECTRONICS!

The realism is helped by those controls John built. So how did he do it? Forget all ideas about fancy electronic interfaces - John's solution was to build mechanical links from his controls to the ST's mouse and keyboard! The main control is the yoke, which moves back and forth for elevator operation, controlling the aircraft's pitch. It also rotates laterally left or right for aileron operation, giving roll control. The yoke is attached to a platform supporting a mouse mat, which slides fore and aft or left and right to match the yoke movements. The ST's mouse sits in a "cage" in a fixed position above the mat, with its roller ball in contact with it. As the mat moves it operates the mouse, the overall effect on FS2 being the same as moving the mouse across the mat in the normal way. Ingenious!

The mouse isn't actually firmly fixed, as it can be moved a little in the fore and aft direction by a trim wheel. This allows the aircraft's elevator trim to be adjusted in a realistic way. Other controls operate flexible cables (as used on bike brakes!), the other ends of which are arranged so they press keys on the ST's keyboard.

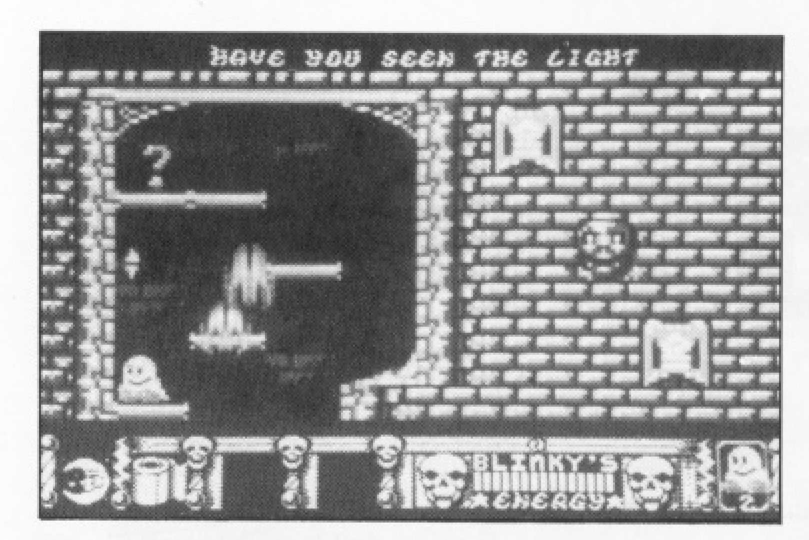
One thing that's difficult to recreate is the "feel" of the controls, but John has even produced a mechanical solution for this. He's fitted springs to them to simulate the control pressures experienced in a real aircraft!

For ages Sublogic have been rumoured to be on the point of releasing their own realistic flight controls for FS2. If you're fed up with waiting you could follow John's example - he's shown that with a little enthusiasm and ingenuity you can build your own. But be careful. It could cause that flying bug to bite even harder, and like John you just might be tempted into the real thing.

Don't say I didn't warn you!

Photographs by permission of Messenger Newspaper Group

GHOSTLY GOINGS ON



'It was a dark and stormy night as Hamish Mactavish, Lord of Dauntrochie Castle, settled down to sleep, but little did he realise that Blinky was on a mission as a newly trained ghost to scare him before daybreak...'

Hence the unusual title of Ian Copeland's latest programming tour de force for Zeppelin Games, a company whose track record in Atari 8-bit circles has been somewhat remarkable. From the stunning Zybex to the challenging Jocky Wilson's Darts, Zeppelin's output has consistently achieved an exemplary standard. I predict they may soon be adding BLINKY'S SCARY SCHOOL to the growing list of triumphs.

The game is an arcade adventure of the type that fans of the brilliant Draconus will be well accustomed to. It is set in the interior of Dauntrochie Castle and the graphics are of the distinctively shaded and detailed style of many a Zeppelin hit. The castle stretches over numerous screens and the topical scenery 'page flips' as Blinky glides around the levels. Blinky is very clearly and brightly defined and humorously animated - not to mention capable of some incredible jumps that would amaze all but an expert Ninja Commando (sic!). Joystick controls are responsive and easy to manage - games programmers observe!

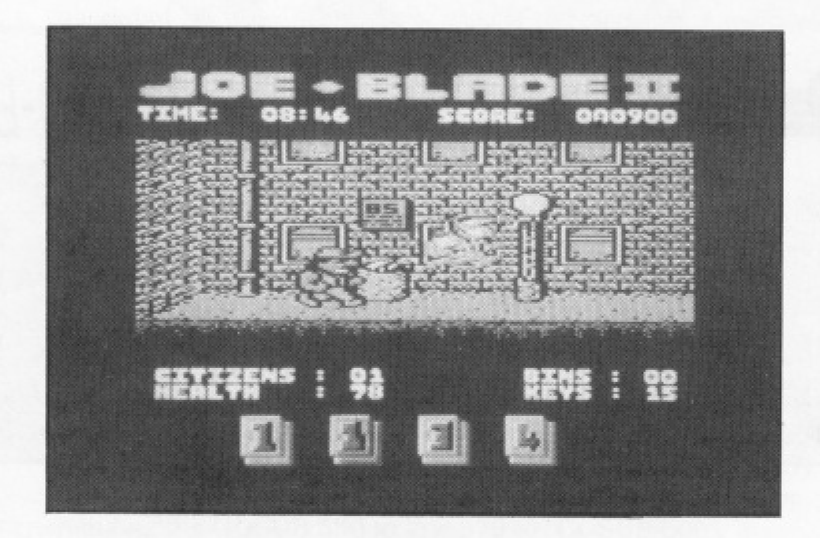
It seems that Blinky's aim is to prove his ghoulish ability by collecting the ingredients for a series of mysterious potions, which will eventually allow him to spook the sleeping Mactavish. There are many artefacts scattered throughout the Castle and the first job is to find a poetic message telling him which ones are required and which are best left alone. Blinky's capacity for luggage is limited and several journeys must be made to the Cauldron as the game progresses. Fortunately, there is an unusual short-cut back to the start - but I'll leave that for you to discover!

Not unexpectedly there are lots of nasties lurking in the castle with intent to stop Blinky's road to graduation. Some are fixed in a particular position, others hover vertically but worst of all are those which creep across the screen! All this makes for a challenging, addictive and eminently playable arcade adventure.

Needless to say, I'm impressed! If you've already experienced the Zeppelin formula you'll know what to expect - if not, be prepared for excellent graphics, good music and a generally top-notch game. Can it be true or is it just an apparition?!

Title:	**BLINKY'S SCARY SCHOOL**
Publisher:	**Zeppelin Games**
Price:	**£2.99**
Players:	**1**

Reviewed by Paul Rixon



HERE COMES JOE AGAIN

The year is 1995, the setting is London, and the game is the long awaited Atari 8-bit conversion of the sequel to Players' Joe Blade, called - believe it or not - JOE BLADE 2!

Joe Blade is a mean, tough and fearless super-hero whose very name strikes fear into the hearts of criminals across the land. In the original game (reviewed in PAGE 6 issue 36) Joe's task was to save the world from the clutches of an evil madman, Crax Bloodfinger, who had kidnapped a group of VIP's and demanded a ransom for their safe release. Evidently Joe won the day, as the follow-up places him on an entirely different assignment - his mission, to clear the streets of London's capital from menacing punks and muggers and to rescue distressed citizens from the surrounding neighbourhood.

As before, the game is a multi-screen arcade adventure with a myriad of passages and rooms to explore and artifacts to accumulate. The action unfolds in a centrally situated viewing window depicting the buildings, walls, doorways and streets in colourful cartoon-style graphics. Indicators below display the number of citizens rescued, bins collected (a certain number is rewarded by a special bonus), keys in store and the current state of Joe's health. Above, the all-important timer creeps persistently down towards zero, although it can be reset by obtaining a certain article.

Unlike the Joe Blade of old, our hero is not equipped with any fire power but must execute a well-timed leap to eliminate his adversaries. At various stages, Joe enters a sub-game where his aim is to correctly arrange a series of numbered tiles into a specified order. The solution becomes increasingly more complex in subsequent sub-games placing great pressure on the player - especially since a single failure will result in instant termination of the mission!

At this point, you're probably expecting me to announce that Joe Blade 2 isn't as good as its predecessor - but I'll have to disappoint you! It's true that I did find the original Joe Blade more instantly playable, but this is probably due to the lack of instructions supplied with my preview copy of the sequel. Joe Blade 2 should be out now, and I'd advise all arcade adventuring types, especially fans of the original game, to grab a copy without hesitation!

Title:	**JOE BLADE 2**
Publisher:	**Players**
Price:	**£2.99**
Players:	**1**
Loading:	**11.25 minutes**

Reviewed by Paul Rixon

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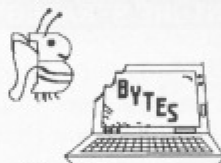
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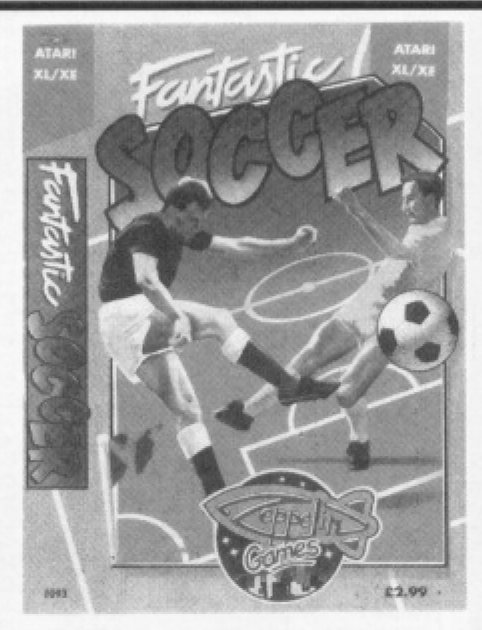
"Needless to say I'm impressed ... excellent graphics, good music and a generally top-notch game"
Paul Rixon



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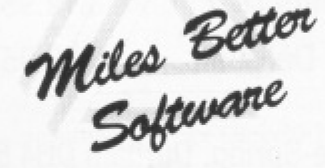
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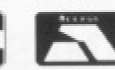
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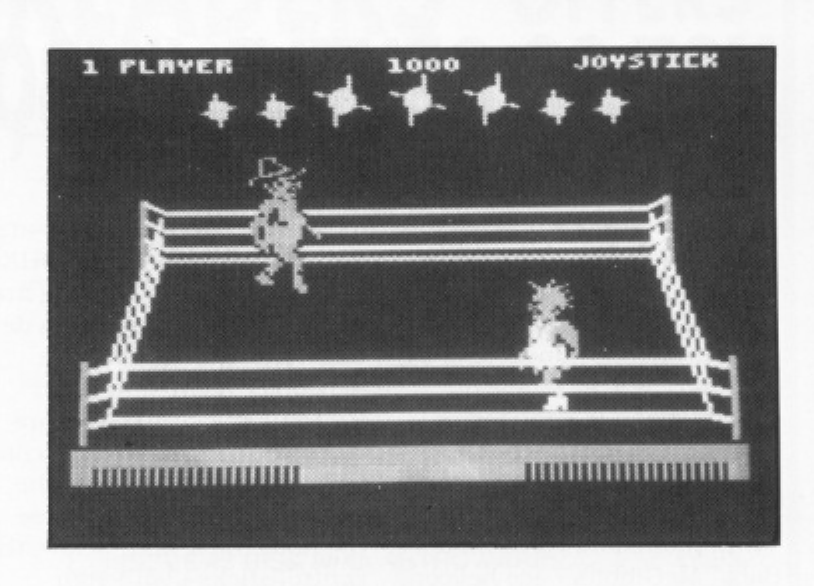
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ITS' A KNOCKOUT



Another US classic from Mindscape brought to our disk drives by those clever people at Sunaro Software (see Infiltrator, reviewed elsewhere in this issue). The lavish packaging, with glossy instruction booklet and reference card, is home for a somewhat unique game - as far as I am aware, the only wrestling simulation ever produced for the 8-bit Atari. BOP 'N WRESTLE is also one of the few games which utilises the extra memory of the 130XE. Although it will run adequately on 64K machines, it does mean that the disk drive is kept in almost continuous use, so that the game plays rather sedately.

Bop 'N Wrestle places you in a three dimensional ring with a series of mean and angry wrestlers, with names such as Bad Barney Trouble and Redneck McCoy - a dubious bunch if ever there was one! As Gorgeous Greg, handsome hero of this epic event, it's your job to battle past ten opponents and ultimately grapple for the coveted Championship belt. Wrestling manoeuvres are carried out by a combination of the four main joystick positions (diagonals aren't used) and the trigger button. There are twenty three possible moves and the necessary combinations for each are dependant on the preceding position. So, for example, a grab might be followed by a headlock, armlock or a full nelson which in turn could be finished with a spin or a throw.

The manual explains all moves in detail and it's best to experiment in two player mode, minus the second player, before tackling the computerised opposition. Alternatively, moves may be controlled by keyboard presses - however, unless memorising such facts as "H/semi-colon for a reverse suplex following a grab" is your idea of fun, it might be wise to persevere with those fiddly joystick commands!

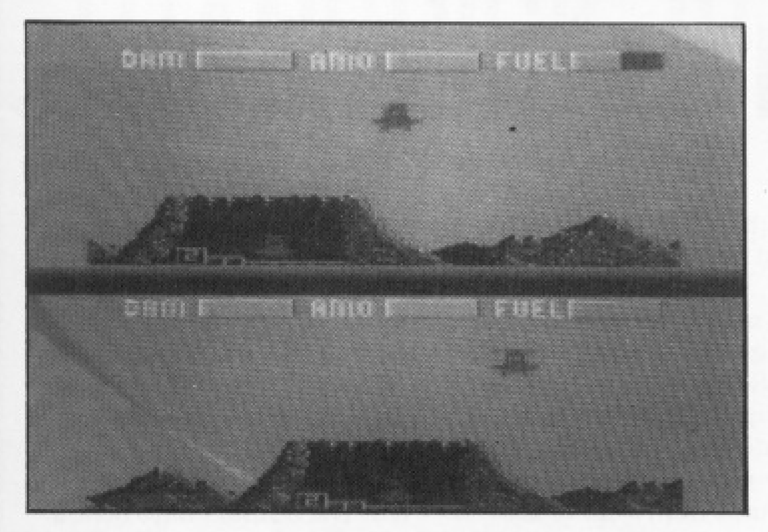
Graphics are quite well done (though not as stunning as the screen shots on the packaging) and include some amusing animation, albeit rather slow and jerky without the additional RAM. The sound features a momentary burst of recognisable (just!) speech for the count to three, and also a lively theme tune.

If you're suffering withdrawal symptoms after the removal of ITV's Saturday wrestling slot then this is obviously the game you need. Remember, it's only available in limited quantities from Sunaro - you may never find another wrestling simulation for your Atari.

Title:	**BOP 'N WRESTLE**
Publisher:	**Mindscape**
Price:	**£9.95 disk**
Players:	**1/2**
System:	**64K min, 128K recommended**

Reviewed by Paul Rixon

A TALE OF TWO CHOPPERS



The company who pioneered budget priced software on the 8-bit micros and subsequently produced a string of Atari hits have been keeping unusually quiet in recent months. But fear not - Mastertronic are back with a new release that appears to be worthy of the wait!

PROTECTOR features a scrolling split screen display and some pleasantly drawn scenery representing the vast Nevada Desert - home, indeed, to Fort Rucket, the US Army school for would-be helicopter pilots. With ambitions to become the slickest chopper ace this side of the Iron Curtain, you are faced with a strategic battle of wits against a human or computerised opponent. Unless you're one of those people who struggles to negotiate the joystick out of its storage box, forget the latter option though - the automated pilot is far too predictable and ridiculously simple to beat, even on the advanced difficulty setting.

The game itself is actually quite straightforward, but with two evenly matched human players this is as much a point in favour as a subject for criticism. All you have to do is collect three supply boxes, one at a time, from the desert landscape and ferry them back in your helicopter to the cavern headquarters. Collect all three and you have the necessary ingredients of a bomb suitable for dropping on your opponent's base - easy, eh?

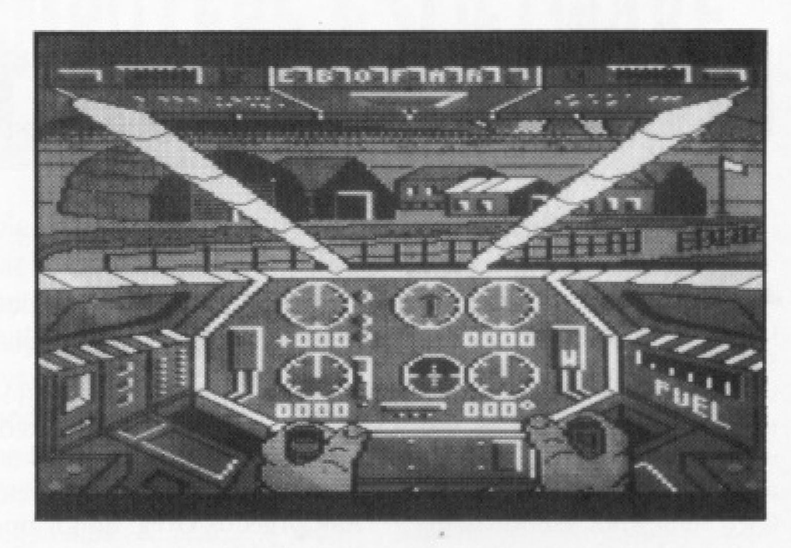
The fun begins when one player decides to steal supplies from the other player's base - the ensuing battle can be quite entertaining. One tactic is to patiently wait until your opponent's collected all the supplies and then slip in and steal the assembled bomb at the latest opportunity. Of course, once caught out the first time, your opponent will be waiting to retaliate with a similar ploy! To add an extra dimension of excitement, each player is armed with a Gatling cannon - useful for mid-air encounters - and the fuel supply is extremely limited, so you must frequently return to the heli-pad for a re-fill.

As one of the few arcade games in which you can't lose a 'life', PROTECTOR is a uniquely refreshing challenge. Both graphics and sound (the music is remarkably similar to something I've heard in an ST demo - but I can't remember which one!) are competently engineered and the game scores highly in terms of playability - surely the most important factor. Good stuff from Mastertronic!

Title:	**PROTECTOR**
Publisher:	**Mastertronic**
Price:	**£2.99**
Players:	**1/2**
Loading:	**9.5 minutes**

Reviewed by Paul Rixon

NOT SO GENTLE JIMBO



Not a new game as such, but a very welcome import of a sophisticated package from respected US software house Mindscape. INFILTRATOR is available on disk only and is supplied in superb packaging - complete with both a forty page manual and a quick reference card.

As Captain Johnny "Jimbo Baby" McGibbits - ace helicopter pilot, ballistics expert, neurosurgeon, rock star and all-round good guy, alias The Infiltrator - your task is to prevent the Mad Leader from destroying Earth. The first stage of the game requires you to fly through hostile enemy air-space to a specified target area in the 'Whizbang Gizmo DHX-1 Attack Chopper', having first mastered the controls of a detailed and quite incredible helicopter flight simulator. Entering the Gizmo, you are faced with a vast array of controls and dials. Through the cockpit window you can see the home base and, below, the control sticks - with your hands firmly attached!

Like all flight simulations, it's important and entirely necessary to spend some time learning the numerous commands before you can progress with the game. As well as joystick movements there are some fourteen keyboard commands, activating such devices as canons, flares and turbo boosters. In addition there are warning lights, fuel, oil and battery gauges plus several other indicators to monitor.

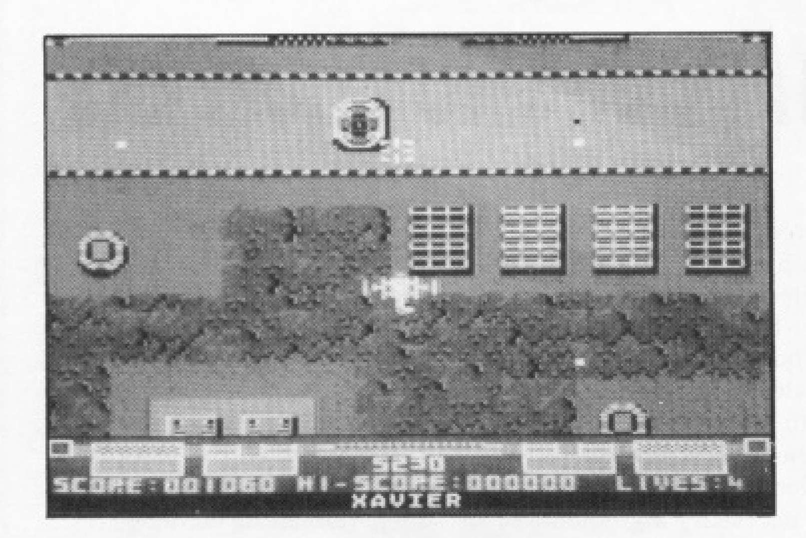
As you head towards the target destination you will encounter other aircraft, some friendly and others not so friendly! The only way to determine which is which is by requesting the pilot's ID and judging by the response given. One you've reached the target and negotiated the landing procedure (easier said than done!) the scene changes to an overhead perspective of the helicopter landing site. From here you embark on a ground mission to pulverise the Mad Leader's installation. This involves searching various buildings for security cards, keys and other objects whilst avoiding capture and attack. You can't afford to hang about either - a strict time limit is imposed. Complete a mission and you start again on a much more challenging assignment - at least, that's what it says in the documentation!

Overall, an excellent piece of software. Whether you're a flight sim fanatic or an arcade addict, this is one of those games that shouldn't be missed. Limited quantities are available now from Sunaro Software - see their advert in this issue.

Title:	**INFILTRATOR**
Publisher:	**Mindscape**
Price:	**£9.95 disk**
Players:	**1**
System:	**64K min**

Reviewed by Paul Rixon

ENTER THE HAWK



Introducing a quite remarkable package - a game that might never have left the opposite side of the world had it not been for the efforts of PAGE 6, the influence of its dedicated readers and the infinite wisdom of the staff at Red Rat Software. I'm referring, of course, to HAWKQUEST, a game previewed fully in issue 39. I've now received the official release and am pleased to say that it's everything I had hoped it would be. I understand that Red Rat have experienced some problems with the promised conversion to cassette, but hopefully it should be available soon.

You may recall that Hawkquest is set in a far-off region of the Universe. Your home planet has developed a powerful energy generator based on a unique and mystical crystal. Unfortunately, the crystal has been stolen by an enemy race who have disassembled it into five pieces and hidden each in an underground fortress. As you'd expect, the fortresses are guarded by nasties galore and there's only one person could possibly battle past that lot!

The mission is split into two sub-games, the first of which is a vertically scrolling shoot 'em up similar in style to the arcade classic 'Xevious'. Initially you must select a planet to attack from a set of five alternatives. Different planets feature characteristic scenery and enemy craft, but the objectives on each are the same - bomb the installations, avoid the return fire and annihilate everything you can! The second phase of the mission is a complex eight-way scrolling shoot 'em up, your aim here to retrieve various items which ultimately lead you to the missing crystal. Traps abound, but a save game facility prevents the odd mishap being too disastrous. If you want to persevere with the secondary game but can't master the first, you can load in a preset fortress - one of many thoughtful additions making this a wonderfully playable game.

There's not enough room here to do the graphics justice - all I will say is that they're superb and you won't be disappointed. The authors have done a marvellous job in creating the sort of game that Atari owners have long been crying out for. Red Rat deserve a good deal of appreciation, too - how better to show your thanks than by purchasing one of the best arcade games since the Jaggies invaded Fractalus!

Title:	**HAWKQUEST**
Publisher:	**Red Rat**
Price:	**£19.95 disk/£9.95 cassette**
Players:	**1**

Reviewed by Paul Rixon

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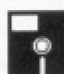
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BACK ISSUES *Only these issues are now available!*

PAGE 6 back issues represent an excellent way of increasing the enjoyment of your Atari with articles to enlighten you, programs to type in and reviews of software to guide you. Almost all of the content of past issues are as fresh and relevant today as when they first appeared. Disks are available for all issues, containing all the 8-bit programs from each issue ready to run, and they often include bonuses not found in the magazine.

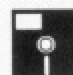
THE FOLLOWING ISSUES ARE STILL AVAILABLE

ISSUE 31 - Our massive survey on all the WARGAMES available for the 8-bit Atari heads this issue which also includes a great type-in synthesiser listing called ORIGINAL SYNTH. Other listings include FONT FACTORY, a nice character editor and a challenging game called BOWL TRAP. A feature on SSI, more Tutorial Subroutines, a long feature on THE NEVERENDING STORY, reviews of ROADWAR 2000 and THE DUNGEON plus many more are also in this issue. ST SECRETS, a new series on ST programming begins with a look at sound and the ST reviews section includes IMG SCAN, BASE TWO, TEMPUS and many more.



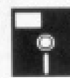
DISK AVAILABLE - All the extra files for ORIGINAL SYNTH set up ready to run plus others

ISSUE 32 - A great card game for 8-bit users called, rather uninspiringly, WHIST plus a two player game of TENNIS and a GRAPH MAKER that works on the 1029 printer. A new series starts on EXPANDING YOUR ATARI and there is an excellent program/tutorial on BUBBLE SORTING. Reviews include THE PAWN, GUILD OF THIEVES, SPARTADOS/U.S. DOUBLER and many more. ST users can find out about programming graphics with ST SECRETS and can read all about the TURBO DIZER, PC DITTO plus reviews of Tanglewood, Defender of The Crown, Winter Olympiad, PROSPERO FORTRAN and more.



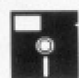
DISK AVAILABLE - DOUBLE SIDED with BONUS MACHINE CODE ARCADE GAME only on this disk.

ISSUE 33 - Many readers have said this is our best issue yet with an extensive feature on choosing a printer for your Atari, plus HEAVY METAL, a superb type-in machine language arcade game. Other type-in listings include another game, CRYSTAL CRISIS and two utilities, COLOUR TUNER and SOFTKEY, the latter being a super keyboard 'macro', utility. ST owners can find out more about PROGRAMMING GEM with another article in the series and there are loads of reviews including MASTERPLAN, GUNSHIP and SPECTRUM 512. There's much more in this issue besides, including some great music for the 8-bit.



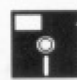
DISK AVAILABLE - including TWO BONUS GAMES that are not in the magazine.

ISSUE 34 - An ADVENTURE special to delight all fans of Atari Adventuring. Exclusive and extensive interview with LEVEL 9, two TYPE-IN 8 bit ADVENTURES, games reviews, bumper A-Z HINTS AND TIPS for all kinds of adventures, a survey of almost every known Atari adventure and much more. Other items include DAVE T'S DISCO, FLYING BY THE BOOK, TUTORIAL SUBROUTINES, the SHELL SORT and the regulars. ST File includes a round up of ST adventures, a review of DUNGEONMASTER, hints on adventures and stacks of general games reviews.



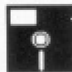
DISK AVAILABLE - includes TWO BONUS ADVENTURES only to be found on this disk.

ISSUE 36 - Another cracking machine language game from Paul Lay called STAR RIDER plus HEADBANGER, also in machine code, MUSIC BOX and SYNTH II to type in. MAPPING YOUR ADVENTURE shows you how to succeed in adventures, 850 SPLIT reveals secrets about the 850 interface, DESIGNER KEYS allows you to customise the keyboard. Then there's BEGINNER'S BASIC plus a new series on TURBO BASIC, reviews of MERAK, Draconus, Joe Blade and more. For the ST we have B BOOT to allow you to boot from drive B, STOS reviewed, TRIP-A-TRON, SPELLBOOK, SUPERBASE PROFESSIONAL all reviewed and you can find how to never get lost again with AUTOROUTE. All this plus much, much more.



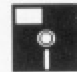
DISK AVAILABLE - includes BONUS MACHINE CODE UTILITY to add 128 colours to Atari Artist or Micropainter pictures.

ISSUE 37 - Some excellent listings including SCROLLY TEXT EDITOR, a superb utility for creating scrolling messages on the XL/XE just like those on the ST, plus BLASTCOM, a fast and furious blast 'em up, and SUNPLOTTER which shows you the position of the sun and times anywhere in the world. Also FINDER for searching your programs, the first part of MACHINE CODE LIBRARY and the CASSETTE DATABASE. Loads of reviews, as usual, including SpartaDos X. ST File includes the first part in the MIDI series and coverage of PROTEXT and FLAIR PAINT plus reviews of HEAD-COACH (where have you seen that reviewed elsewhere?), SPRITE MASTER and a whole host of games. Lot's more besides.



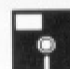
DISK AVAILABLE - includes BONUS program UNDER STARTERS ORDERS, a superb horse racing game for all the family

ISSUE 38 - A super educational program, MCQ-TEST, for revision, homework or fun. The MACHINE CODE library looks at saving and loading memory, a utility lists a REAL TIME CLOCK for your XL or XE and THE PODZ is a great scrolling game. There are several more listings. The TIPSTER begins and articles include THE GAMES THEY NEVER RELEASED and more on Turbo Basic. ST owners can enjoy type-in routines for graphics, reviews of MINIX, FUN SCHOOL 2, POLICE QUEST II plus loads of games. The MIDIots guide continues and John Sweeney looks at KINGS QUEST and LEISURE SUIT LARRY.



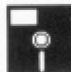
DISK AVAILABLE - includes GALACTIC CRESTA a BONUS MACHINE CODE GAME previously released commercially!

ISSUE 39 - The first type-in fishing game for the Atari, CATCH DAY, heads the way with MOUSE PARTY and a NUMERICAL CONVERSIONS UTILITY also to type in. Other features include PAGE MARSHAL, HAWKQUEST, the MACHINE CODE LIBRARY on Player Missile Graphics plus, of course, THE TIPSTER and reviews of 8-bit games including STAR WARS. The ST section includes reviews of THE JADE STONE and DOMES OF SHA, the Midiot's guide to the SEQUENCER, a new column on STOS PROGRAMMING plus many, many reviews including GOLDRUSH and GALDREGON'S DOMAIN.



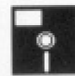
DISK AVAILABLE - includes PRO GOLF as a BONUS. Superb 18 hole action with all the options plus a construction kit to build your own courses

ISSUE 40 - Read all about Sublogic, the company that brought Flight Simulation to the Atari. Programs include SHIFT IT, a mind boggling sliding puzzle game and MEAN MOTOR for fast racing. A simple educational program is LEARN TO READ which you can easily adapt and K-TYPE will improve your touch typing. All these plus the Machine Code Library, Cassette Database, The Tipster and much more. For ST fans the STOS column has type in listings and there are reviews of ARMADA, JET, BATTLETECH and many more. Also the final part in the Midiot's Guide to Music.



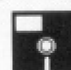
DISK AVAILABLE - includes BONUS machine language game GRIDWARS

ISSUE 41 - Some neat 8-bit utilities including LISTIF, a new command for Basic and LC10DUMP for the Star colour printer. Games include Bill Halsall's great SNAKES ALIVE for up to twenty players! PICMATICS is a nice educational program to teach maths and articles include the MACHINE CODE LIBRARY, CONFESSIONS OF AN ADVENTURE ADDICT and more. ST users can enjoy reviews of INDIANA JONES, POSTMAN PAT, HISOFT C, DEMON'S WINTER and many, many more. There is also the first instalment of MAKING MUSIC and, of course, THE STOS COLUMN complete with type in game.



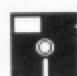
DISK AVAILABLE - includes DOUBLE BONUS of TRAK-STAR and BLOKHEAD. Two great machine language games

ISSUE 42 - Cheat at cassette games with the TAPESTER, play games with TO THE RESCUE and HOT ROD RAIDER. Expand your programming knowledge with MULTI-MOUSE, MACHINE CODE LIBRARY and HEXSAVER. Plus three pages of THE TIPSTER (including the solution to Quest For Eternity), lots of reviews and TURBO BASIC. ST owners can enjoy reviews of NEODESK, SCAPEGHOST and a host of games together with the regular Music Column and our STOS COLUMN with type-in programs.



DISK AVAILABLE with BONUS game BRIK-BAT, a classic machine language program

ISSUE 43 - A major tutorial on DISPLAY LISTS heads the features in this issue with the normal top class type-in games including SKIRMISH, in which you control SIX planes at once, and BIORHYTHM MONITOR to check whether today is a good day. There is a hardware project for a WRITE PROTECT SWITCH and a couple of good utilities for cassette users - TAPESTER MkII and VERIFY!. Plus Dungeons & Dragons, The Tipster, reviews and more. On the ST side we have the regular STOS column with a program from STOS author Francois Lionet plus reviews of GAMES GALORE, HILLSFAR and DAILY DOUBLE among many others and a round up of all the DEMOS available in the Public Domain.



DISK AVAILABLE with DOUBLE BONUS - ASTROWARP a 2 player space game and SOUTH SEAS TRADER a simulation

SOLD OUT The following issues are SOLD OUT

ALL ISSUES PRIOR TO ISSUE 31 and ISSUE 35



BACK ISSUES are £1.50 each in the UK, £2.40 for Europe or surface mail elsewhere and £3.50 for Air Mail outside Europe. Prices include postage.
ISSUE DISKS are for any 48k or 64k 8-bit Atari. Each disk is £2.95. Postage FREE in U.K. Overseas add £1 per order (any number of disks)
Send your order to PAGE 6, P.O. BOX 54, STAFFORD, ST16 1DR, ENGLAND. ACCESS and VISA accepted. Telephone 0785 213928

contact ... contact ... contact ... contact

FOR SALE

XE SYSTEM: 65XE, XC12 cassette recorder, joystick, over £100 worth of games and B/W television, £140. Phone Paul on: 0606-559185, evenings and weekends

PRINTER: 1020 Printer/Plotter, £50; Touch Tablet, £30. Both boxed in v.g.c., plus software (original). Ring Stephen on: 0773-833746

ST MEGA SYSTEM: MEGA 1, Megafile 60 Hard Disk, Philips colour monitor, SM124 mono monitor, SF314 external floppy drive, Star LC10 printer, VidiST and over £1000 worth of software plus some books and magazines, all for £1100. Phone Tim on: 021-358-2708 (Evenings and weekends)

ST SYSTEM: 1040ST and Hi-res B/W Monitor, £350 o.n.o. Phone D. Barr on 0793 -875327 (Day) or 0793-876706 (night)

BOOKS & MAGS: Mapping The Atari, £10; Computer Animation Primer, £10; Advanced Programming Techniques, £8; Compute!'s Atari Collection Vol.1, £6; 6502 Reference guide, £5; Mastering the Atari 600XL, 800XL, 400 & 600, £3; ROM Assembler Cartridge, £10; Turbo Basic Compiler (disk), £3; Two games, 20 magazines: 14 Atari Users, 2 Page 6, 2 Monitor and 4 various titles, £10 the lot. Write to: P. Morris, 118A Cranleigh Road, Southbourne, Bournemouth, Dorset BH6 5JN. (Postage free)

XE SYSTEM: 130XE, 1050 drive + software, £150. Upgrading to ST hence low price. Also software clearout. SAE for details to: A.E. Talbot, 68 Carlisle Street, Springburn, Glasgow G21 1EF

PRINTER: 1027 LQ in excellent condition, complete with leads, ink rollers, AtariWriter Plus software and all manuals in original box, £75. Also 1010 data recorder in excellent condition complete with leads, Atari Touch Typing software (two cassettes) and all manuals, £25. Telephone (Glos) 0452-714533

8-BIT BARGAINS: As new, two XF551 360K disk drives, SpartaDOS X, 850 Interface, XC12 cassette plus many original software titles including MAC65, some books and magazines, £250. Phone Tim on: 021-358-2708 (Evenings and weekends)

XL SYSTEM: 800XL, 1050 disk drive, tape deck, joystick, magazines, 200+ games on tape & disk. No splits, £225. Tel: Wells (0749)-75311

XE SYSTEM: 65XE, includes all leads, manuals and XC12 data recorder, boxed as new, only 6 months old; about 70 games (over £300 worth); 30 Atari magazines from January 1987 up to date; games listing book, Cheetah 125+ joystick. No splits. Buyer pays postage or collects. Sell for £300. Phone Craig on: Lincoln (0522)-528318)

XL SYSTEM: 800XL expanded to 256K, 1050 with Doubler, 1027 Printer, Touch Tablet, Light Pen, Joysticks, Mouse, Centronics printer lead, cartridges (Atari Artist, Assembler/Editor, Basic XE, clock, SpartaDOS X), Software (Fighter Pilot, Hitch-Hiker's, Mini Office, Page Marshall, Turbo Basic, Forth, Tari-Talk, Textpro, CAD and more), Literature (Technical Notes, De Re Atari, Mapping The Atari, several machine code tutors plus 60 magazines). Also Computerhouse Controller Card (not fitted) with 80 column emulator, Omnimon and Ultramon, £300. Phone Dave on: 0277-659098 to arrange delivery in Essex

PRINTER: Brand new 1029, complete with manual and ribbon, £100 o.n.o. Tel: Blackburn (0254)-240649 any time

XL SYSTEM: 800XL, 1050 disk drive with US Doubler fitted, 1010 data recorder, 1029 printer, 190 disks including disk boxes full of games & utilities, lots of Atari User mags, plus dust covers, instructions and some tapes, £260 the lot or will split. Tel: 0254-394895

XL SYSTEM: 800XL, 1050 disk drive, software including Mini Office II, Superscript, Swift Spreadsheet, Leaderboard, International Karate, Silicon Dreams, Jewels Of Darkness, Mercenary, Scooter, Starquake & others. 100 cap. disk box, Page 6 and Atari User magazines, joystick and printer interface, £200 o.n.o. K.A.M. Wright, 15 Carrick Drive, Dalgety Bay, Fife KY11 5YB (Tel: 0383-822358)

800 SYSTEM: 800 + 1010 tape recorder, £100 worth of software, with all leads and instructions. Open to offers. Phone: 0733-270389 after 6pm

BOOK: "Atari Games & Recreations" by Prentice Hall, £8.00. Unwanted gift. Tel: Belfast 625430

8-BIT BARGAINS: Business/Utilities/Games; Tutorials; Books; Magazines. Far too many to list! Write to: S.Beauchamp, 1 Gosden Close, Furnace Green, Crawley, West Sussex RH10 6SE or Phone: 0293-511708

XL SYSTEM: 800XL, Phonemark data recorder, 3 joysticks, 3yrs of Atari User (Issues 1-12; Vols 2,3 & 4) + others, over 130 games worth over £300, tape hacker utility, dust cover & manuals, £100 o.n.o. Tel: 0383-822798 and ask for Steve

HANDHELD COMPUTER: Atari Portfolio together with parallel interface and two manuals, £200 o.n.o. Tel: 0375-675757 (Evenings)

XE SYSTEM: Complete with light gun, Flight Simulator II, etc., plus XC12 with some games on cassette, only £60. Phone: Macclesfield (0625)-31357 after 6pm

XE SYSTEM: 130XE, XF551 drive, XC12 recorder, disk box, disks, Mydos 4.5, over £200 of original software games (mostly on cassette) plus Computes 1st and 2nd Book Of Atari. (No splits), £350 o.n.o. Tel: 021-742-8038

XE SYSTEM: 65XE, XC12 datacorder, joystick, Mapping The Atari (Revised edition), Games For The Atari book, £25 worth of software, in excellent working order and boxed as new, £75 or open to offers. Phone Chris on: 0602-845336. Will deliver in Nottingham area

XE SYSTEM: 130XE, 1050 disk drive, 1029 printer, 1020 printer/plotter and XC12 cassette plus Atari Touch Tablet, also some software (on disk & cassette), Assembly language books and OSS Mac-65 assembler/editor. Will sell for £350 o.n.o. May separate some items. Contact Paul or Mark at: 14 Meadow Road, Oldbury, Warley, West Midlands B68 8PG

XE SYSTEM: 130XE, disk drive, hyper chip, recorder, speech synthesiser, lots of magazines & software, disks and holder, everything in working order and total value of over £500, selling for £250 o.n.o. Buyer collects. Phone: 0203-441832

8-BIT SOFTWARE: File Manager 800, £15.00; Visicalc, £10.00 plus some games. Also printer interface, books, etc. Offers. Phone: 0702-610424

8-BIT BARGAINS: Magazines & loads of top quality original software (C+D) and 60+ utilities. Will split. Ring: 0483-720533 and ask for Matthew

TECHNICAL REFERENCE NOTES: 400/800 including Operating System Users Manual, Operating System Source Listing & Hardware Manual in brand new condition, unused but punched for British A4 size files. Phone: 0602-253644

XE SYSTEM: 130XE, £40; 600XL, £20; 400, offers? Also Atari half-meg drive for the ST, offers? Tel: Christian (0502)-585815

XL SYSTEM: 800 XL, 1010 data recorder, some software, all boxed and in excellent condition, sell for £50.00 o.n.o. Tel: 0533-771707 after 6pm

800XL SPARES: Power Unit, Ferguson MC01 composite video lead, Modulator, Complete set of Atari User (Database) magazines, offers? Mini Office II, £10.00 o.n.o. Tel: M. Newman (0277)-264626 (Office) or (0245)-268063 (Home)

SERIAL INTERFACE: Miracle Datatari with multi-viewterm software program (new); Bulletin Board, Telex, Prestel, Micronet suitable for 800XL, 130XE, 65XE, bargain, cost new £59.95, sell for £30.00. Also original adventure game still in packaging, Seven Cities Of Gold, was £29.95, first £5.00 secures! Ring Les on: 021-783-5807 (Birmingham)

ROM LOGO: Including manuals, £10.00. Please write to: E. Steffens, Rawson Street, Leicester LE1 9BG

ATARI MAGAZINES: The very FIRST edition of Atari User, May 1985-December 1978 plus Page 6 Issue 7 (Jan 84) to Issue 30 (Dec 87), £30 o.n.o. Phone Kevin on: Dean (0594)-543892

PRINTER: 1027, letter quality in excellent condition, complete with manual, leads, ink roller and bottle, £75.00 postage paid. Tel: 0742-581605 after 6.30pm

WANTED

8-BIT UTILITY: Required to either transfer Transdisk IV or Taskmaster programs to ROB C or back to cassette + a Binary to cassette transfer utility. Write to: Colin Brunt, 47 Longfellow Drive, Herringthorpe, Rotherham S65 2LH

DISK DRIVE: 1050, in the Lancashire area. Must be in good working order, any reasonable price paid. Ring David on: 0942-602981 after 5pm

DRUM KIT: Swap for Atari 800XL, 1050 drive, data recorder, disks, tapes, dust cover, power packs, books, mags, desk, speech synth., joysticks. (Photo of kit required.). Phone Simon on: 0843-63495 (Thanet)

SPYHUNTER: Has anybody got this game on cassette who would be willing to sell it to me for £4.00 including postage? Tel: Leicester (0533)-888853

JET SET WILLY: Wanted for XE/XL machine. Will pay £1.50. Write to: 213 High Street, Talke Pitts, Staffs. ST7 1QQ

TURBO BASIC: Will pay good price for this program on tape. Write to: Simon Cox, 47 Bobgreen Court, Whitley Wood, Reading RG2 8UE or Phone: Reading 860177

UTILITIES: Turbo Basic (on cassette) and an Assembler. Write to: D. Bonnia, Block 1, Door A, Flat 4, Eucalyptus Street, Som Gwam, MALTA

DOS 3: I have an 800XL. Can anyone help me obtain a copy of DOS 3 master disk? I have some files on this old system that I would like to unlock. Write to: Bernard M. Adams, 14e Clayton Street West, Newcastle-upon-Tyne. (091-261-7422)

ST OUTFIT: Swap my 800XL, 1050 disk drive, XC12 recorder, software & magazines in mint condition. Tel: Milton Keynes 609839

DISK DRIVE: Has anyone got a 1050 or XF551 disk drive they wish to sell? Must be complete with manuals, etc., and be in good working order. Phone Gary on: 0702-470628

MANUAL: 1st Word Xlent word processor manual for 800XL. Will accept original or photocopy. Willing to pay shipping costs. Looking to expand to 256K...need chips and instructions, make offer. Also looking for Issue 26 of Page 6, with or w/o disk. All replies answered! Jonathan Banker, c/o Sutterlin, ElsasserStr 5, 7850 Lorrach-2, WEST GERMANY

LISTINGS HELP: Does anyone have the listing "Get It Right II" from Atari User? Write to: A. Dumitrescu, 190 Colinmill, Poleglass, Dunmurry, Belfast, N.Ireland BT17 0AU

DISK DRIVE: XF551 or 1050/U.S. Doubler with DOS XE or SpartaDOS. Tel: 0205-353446 after 5pm

INSTRUCTIONS: For Sound Machine (Peter Finzel Productions - 1986). This is a German program so it may be a bit rare, but if anyone can help I would be very much obliged. Phone (0843)-63495 (Thanet) and ask for Simon or leave a message

MORE OVERLEAF ☞

FOR SALE ... WANTED ... PEN PALS ... ADVICE ... HELP ...

contact extra ... contact extra ...

8-BIT SYSTEMS REPLAY: Sound sampling package. Must be in perfect condition complete with cartridge, disk, interface with full instructions. Will pay up to £25 or swap for 800XL (no power lead) + XC12 data recorder (perfect condition) + 2 manuals and games. Please phone (Wolverhampton) - 495891 after 6pm weekdays except Thursday and Saturday. Ask for Lee

HELP: I am looking for a program to convert standard 62-sector picture files over to Print Shop Magic screen. If you can help, please ring or write to: Les Taylor, 99 Bredon Road, Stourbridge, West Midlands, DY8 4LA or Tel: 0384-379575

DISK DRIVE & PRINTER: Must be in good working order, price as per condition (No XF551's!!). Ring Algie on: 081-993-5694 after 7pm. Can collect in London area

DISK DRIVE: 1050 in good working order. Will pay £50 and collect from London or Birmingham only. Phone Steven on: 081-561-8597 after 6pm

MUSIC PROGS: For the 130XE (cassette-based), preferably machine code with good edit/compose facilities. Must be cheap! Any help on music using Basic gratefully received!!! Write now to: R.Taylor, 48 Livingstone Terrace, Irvine, Ayrshire KA12 9DN

ATARI USER MAGS: Issues OCTOBER & NOVEMBER 1985 plus FEBRUARY 1986. Phone: 0296-71-2441 or write to: 14 Verney Road, Winslow, Bucks MK18 3BL

REFERENCE MANUAL: BASIC reference manual urgently needed please. Good condition, good price! All calls to: Andrew C. Thompson, 135 Henllys Way, St. Dials, Cwmbran, Gwent NP44 7NF or Tel: Cwmbran (06333)-64135

PRINTER CONNECTION: For Epson (centronics parallel). Must work without the need for special driver software and must be cheap, around £10.00. Write to: E. Steffens, Rawson Street, Leicester, LE1 9BG

HEAD OVER HEELS: Has anyone got a copy of this game that they are willing to sell? If so, please contact Steven on: 0423-869127 (after 4pm)

PENPALS

XE PENPALS: I have a 65XE and would like to swap games with and write to girl or boy. Please write to: Simon Cox, 47 Bobgreen Court, Whitley Wood, Reading RG2 8UE

FRENCH-AMERICAN LINK: I am looking for penpals in the U.S.A. and Canada to exchange hints and tips. Please contact: Jerome Bernard, 7 Villa Jacquemont, 75017, Paris, FRANCE

PRINTER HELP: Can anybody please help me with a 1029 problem? The symptoms of the fault indicate a broken print head. Can anybody help me in locating one? Write to: Mr.P. Thorpe-Willett, 28 Cedar Grove, Redcar, Cleveland TS10 3LX

8-BIT USERS: I have an 800XL-256K, 1050 drive and Epson printer. I would like to hear from any 8-bit user to swap hints, tips, etc. I have a massive collection of U.S.A. software titles and books. All letters answered. Write to: Peter Giraldo, Apartado 70388, Zona Postal 1071-A, Los Ruices, Caracas, VENEZUELA

XL/XE USERS: Ray, owner of 130XE, 1050 drive and 410 datacorder needs help, advice, software, hardware, hints & tips. I have 600 games and will swap with any age in any area. Write to: R. Astley, 20 Stand Rise, Radcliffe, Manchester M26 9BT

XE HELP!: Anyone between 13-16 willing to give help on a game problem (System 8 Pools). Write to: Brian Crook, 215 Warrington Road, Goose Green, Wigan, Lancs WN3 6PA

8- BIT PENPAL: Is there anyone out there who wants to be my penpal? I am called Trystan and I own an 800XL and 1010 tape unit. All tape users grab your pens and write to: Trystan Negus, 23 Newbridge Way, Truro, Cornwall TR1 3LX

MAXIMUM 35 words only PLEASE
50 words allowed on PENPALS

CONTACT is FREE of charge and may be used by any genuine Atari enthusiast for contacting other owners. Any notice may be included except those offering software only for sale or exchange or those offering items for sale commercially. The Editor reserves the right to omit any notice received at his discresion.
Send your CONTACT notice to CONTACT, PAGE 6, P.O. Box 54, Stafford, ST16 1DR. Please write your notice on a separate sheet of paper, not as part of a letter.

FOR SALE ... WANTED ... PEN PALS ... ADVICE ... HELP ...

ST FILE

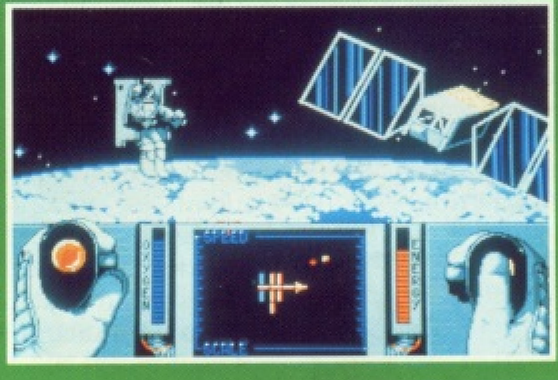
The budget scene is now beginning to expand beyond shoot 'em ups with 16 Blitz introducing simulations and adventures at the £4.99 level. Look out for CONFLICT a Middle East political simulation in which the aim is to force the collapse of four neighbouring governments with military and economic forces and GRIMBLOOD described as a gothic whodunnit written by the author of Midwinter. Electronic Arts are into the futuristic sports arena with TRIBAL a game for up to three players controlling eight teams who come together to play a match on a pitch of five quarters and in three timed halfs. Sounds confusing! Infogrames continue in their frenetic French way with lots more releases including BUBBLE +, EAGLE'S RIDER and POP UP all arcade games and ALPHA WAVES which they describe as 'emotional software' as follows. 'ALPHA WAVES is not just a new game but a new concept. A concept born from the NEW AGE. The marriage of the spirit and technology. These are the base elements which form the idea of NEW AGE. An idea which has inspired the Infogrames creating team to imagine a game which stimulates the brain and brings it to a deep relaxation which can provoke a state of dreaming. The game-play is of unique conception. The management of an item in a cube space in three dimensions. The item has to negotiate a platform and stairway in order to reach the magic door. This three dimensional world is also inhabited by polygonal beings endowed with an intelligence and language which are not of this world. But the game goes further. Alpha Waves is more than a fascinating game-play in an extraordinary universe. To the simple playing pleasure is added the search for harmonious sounds in the alpha wave range. The rooms also emit alpha wave frequencies and this stimulates the mind and deep dream-state relaxation. When diving into the universe of Alpha Waves, you will encounter new sensations. Beyond the projection of the player there is a response from the machine. For the first time ever, the interactive medium goes beyond reflection and intelligence. One could say that Alpha Waves establishes a communication between the micro-computer and mankind. A communication created by the frequencies emitted by the computer and understood by the human brain ... beyond the conscious. I just love the way the French write these things! What it all means is anyone's guess. I wonder what they are on when they dream all this stuff up, I bet it's not just alpha waves! On a more mundane level Infogrames are also releasing several 'simulators' including BRIDGE SIMULATOR, DAMES SIMULATOR (apparently Polish Draughts), BILLIARDS SIMULATOR and PINBALL SIMULATOR. Electrocoin is a new company specialising in coin-op games and now turning its sights to the ST. The first release is TIME SOLDIER converted from the arcade original in which the player controls one of the Earth Commandos through six Eras to face the mighty Gylend, conqueror of galaxies, in a fight to the death. Finally, Virgin Mastertronic have signed up Magnetic Scrolls whose next release will be WONDERLAND with over 100 interactive illustrations. Hopefully we'll bring you a full review soon.



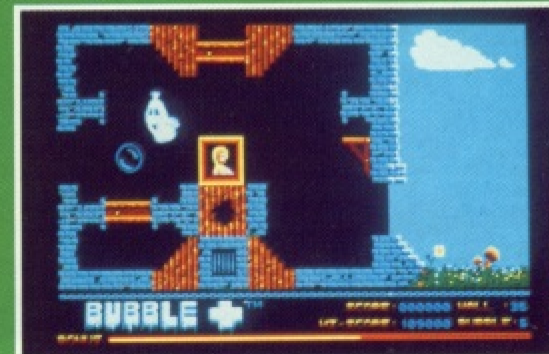
TRIBAL from Electronic Arts



ALPHA WAVES - 'emotional software' from Infogrames



MURDER IN SPACE from Infogrames



BUBBLE + - Infogrames follow up to Bubble Ghost

DRAKKHEN

DUNGEONS & DRAGONS GALLIC STYLE

More mouse-driven, Dungeons and Dragons style mayhem for all you Fantasy Role Playing freaks! This time a fairly comprehensive offering from the French covering both wilderness and dungeons, with myriads of weapons, armour, monsters and magical artefacts such as sceptres of luck and rings of impalpability!

The wilderness is a brilliant 3-D scrolling landscape which you can explore in any direction. Stay on the roads to start with, as nearly everything you need to find is near a road, and if you leave them you can easily get lost (use the mountains as compass points). Make sure you are wearing all your armour as the whole island is heavily populated with beings intent on your demise!

Bump into the cross at the crossroads to the west for your first experience of the superb animated graphics as you are attacked by a giant hound's head! Save frequently (have some spare character disks ready)!

South of there you will find some houses where you can pick up a few hints from the local inhabitants. But don't stray too far south, the southern desert is the deadliest area of the island, heavily populated with small dragons which swoop down at you Space Harrier style. The east of the desert is even worse with giant dragons which land on top of your characters and breath fire until they are dead! (You really need to wait until you are armed with Drags before you have much chance against them - Drags are giant swords which closely resemble chain-saws!)

East from your starting point you will come to your first puzzle: a castle surrounded by a shark-infested moat. How do you get in without being eaten? All I will say is make sure you have a Priest and a Magician in your party since they get different spells and you need lots of spells to finish the game!

Movement in the wilderness is always done as a group, only switching in to four character mode for the fights. But in the castle dungeons you always work with four separate characters. They can go off to different rooms, and indeed need to do so to solve some of the puzzles. The dungeons are easy to map, being a series of interconnected rooms. But you will need to do a lot of fighting and a little bit of problem solving in order to explore them fully. When they are not fighting, your characters can move around the rooms, examining and finding items, manipulating levers and talking to the locals - very similar to Sierra's Quest series, but all icon-driven.

Do be sure and talk to everyone - you need their information to follow your quest, which naturally requires you to save the world (again!). I won't spoil your fun by revealing what you need to do, I'll just say that I have explored five castles of about twenty-seven rooms each so far. I think I only need one more item to reach the end game. I have one last castle to find a way in to and I still haven't used Disk 3! This is a BIG game.

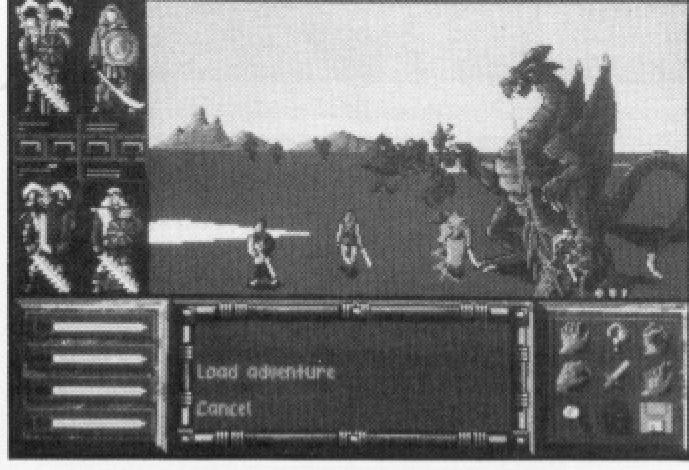
Most of the controls are pretty good, but there are some frustrating aspects to it. Although Drakkhen is mainly mouse-driven you need to use the keyboard frequently as well.

Spell-casting is generally difficult to control - sometimes it won't throw your spell because you don't have enough magic points, sometimes because someone has thrown an anti-magic spell, sometimes because of how you selected it and sometimes it just won't and you have to reboot! Sometimes, in a fight, it throws the same spell until you run out of power. Definitely frustrating!

Likewise fighting can be controlled individually in theory, but in practice the system isn't really up to it and I found it best to just ready my characters then click on Group Combat and let the computer handle the fight - just stand ready with the spells and healing potions!

Death comes a little too easily for my liking, especially since you cannot SAVE in a dungeon! You also need to do an awful lot of fighting to get your levels up high enough to survive in the nastier parts of the world! And some critical messages scroll up before you can read them and are NOT redisplayed! A little more thought on some aspects of the implementation could have made this an even more enjoyable game to play.

Beware if you have a small TV - some of the text is difficult to read on mine because of the choice of colours. Finally thanks to The Guiding Light (0898-338933 - noon to midnight - 38p/25p per minute) for a couple of hints!



Title:	**DRAKKHEN**
Publisher:	**Infogrames**
Price:	**£29.99**
Reviewer:	**John Sweeney**

- ***GAMEPLAY** - Mostly very good with an interesting plot*
- ***GRAPHICS** - Excellent landscapes, dungeons, monsters and animation*
- ***SOUND** - Lots of nice effects*
- ***VERDICT** - Frustrating at times but overall highly addictive - very good value for money*

DRAGONS OF FLAME



The follow-up to Heroes of the Lance continues the adventures of the highly popular DRAGONLANCE characters as they fight their way to the caves of Sla-Mori and round the fortress of Pax Tharkas. (The full story is in the last 100 pages of Dragons of Autumn Twilight!)

The game system is basically the same as Heroes (see issue 37): a joystick-controlled, horizontally-scrolling, fantasy-based, shoot-em up. You'll need to make a rough map to help you in your quest for two hostages, the captured elven princess Laurana, and the fabled Wyrmslayer sword. Count your steps and watch your compass!

The leading character is displayed and does all the fighting with swords, axes, bows and arrows, etc. The space bar gets you a menu for throwing spells, choosing the leader, opening doors, etc. Minor enhancements include: use of found weapons, keystrokes to bypass the menu, and ability for Raistlin to throw spells during a fight.

Major enhancement: a Gauntlet-style, bird's-eye view section added to the front of the game as you cross the wilderness to discover the secret entrance to the fortress. You can meet friendly characters who will tell you where to find supplies, give hints, and even join the party. Fights, however, take place in the normal side-view mode.

Other than that it is very similar to Heroes of the Lance, with the same limitations: the dungeon is pretty simple - once you know the way through you can play the complete game in under half an hour; the monsters are too easy to defeat once you have got used to the system; and your party is far too powerful - you need only put the right guy at the front, heal him now and then, use just one of Raistlin's spells occasionally, find the entrance to Sla-Mori and one secret door, Rest and Open as required, and pick up Wyrmslayer. The rest of the characters, spells and commands are superfluous as are all the various artefacts.

It is a good system, and I am sure SSI could develop a far better total game with it if they tried. Is there an audience out there that wants this sort of thing? Or are they just selling it on the back of the DRAGONLANCE logo?

FACTS

Title:	**DRAGONS OF FLAME**
Publisher:	**TSR/SSI - US Gold**
Price:	**£24.99**
Reviewer:	**John Sweeney**

SIGHT & SOUND

The graphics and animated fights are excellent - shame they don't put as much money into the gameplay

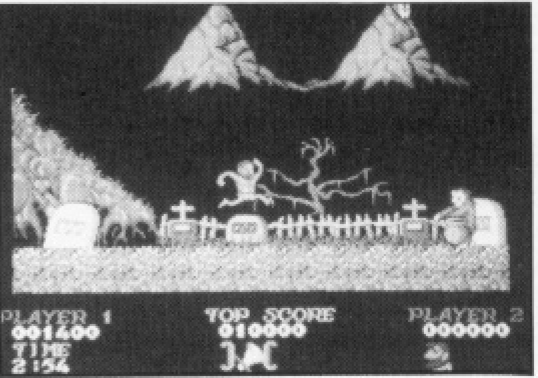
GAMEPLAY

Basically an arcade-style, scrolling beat-em up with a little bit of mapping

VERDICT

Good fun to play, but too easy to master and finish

GHOSTS 'N' GOBLINS



FACTS

Title:	**GHOSTS 'N GOBLINS**
Publisher:	**Elite**
Price:	**£19.99**
Reviewer:	**John Davison jnr**

SIGHT & SOUND

The graphics are very colourful and detailed and bear a very close resemblance to the arcade original. The sound is good but could be better

GAMEPLAY

Addictive and thoroughly infuriating!

VERDICT

It's not obvious why Elite released this game, as it is so similar to Ghouls 'n Ghosts

Last issue I reviewed Ghouls 'n Ghosts, which is actually the sequel to the game I have before me now. I think a big Thank You to Elite is in order for releasing the pair in reverse order - good thinking lads! Nothing like doing things the wrong way round!

Well, what's different about the the 'prequel' to Ghouls 'n Ghosts then? Basically not a great deal! Yet again the game involves a 'classic fighting fantasy story' where you, the heroic Knight, must rescue the beautiful maiden from the demonic Overlord. Is this the same beautiful (but obviously careless!) maiden I hear you cry? Will the valiant Knight succeed?

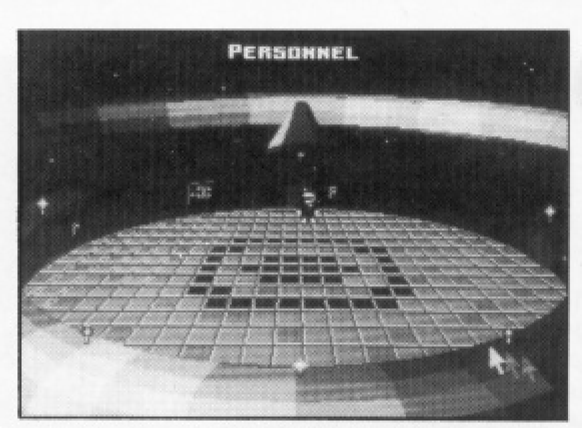
When I reviewed the sequel to this game I was not entirely certain as to how similar the two really were. Now, having examined the two side by side, many of the differences may be seen as superficial and mainly cosmetic. The basic structures of the games are identical. You control the Knight moving through the various landscapes, viewing the proceedings from the side as you try to avoid the various demons and creatures. On your travels you will encounter varying ghoulish types of character from the zombies of the first level, through to demons, ghosts and strange plants which spit out blue and red spotty spheres (most odd).

The graphics are again very close to the arcade original, although they are by no means as good as the graphics which grace Ghouls 'n Ghosts. Likewise the same can be said for the sound effects and music - they're good, but not that good.

In terms of playability Ghosts is both infuriating and addictive. It is incredibly difficult to get to grips with on the first few attempts however once you have got used to being sent back to the beginning of the level if you die (having first lost your armour so you have to run around in your underwear!), the varying challenges become increasingly enjoyable to tackle.

The hardest part of reviewing this game was in avoiding repeating myself from the last issue. The two games are very much alike and I cannot understand why both games should be released so close.

STARFLIGHT



Starflight is a space exploration game of epic proportions, which allows you to explore the unknown reaches of the galaxy. It reminded me very much of a complex version of the old classic 'Star Trek' with a strong trading element added.

Electronic Arts boast that the game sports a total of 800 planets for the player to explore in 270 different star systems, where you can interact with 7 totally different Alien races. These range from the insectlike 'Velox', the bipedal photosynthetic 'Elowan' through to normal humanoid and android type forms.

The objectives of the game, apart from those which you set for yourself, are firstly to gather as much information as you possibly can, and secondly to generate as much revenue as possible. This allows you to maximize your efficiency by building an optimal space craft and crew. To create revenue throughout the galaxy you have a number of options available to you, from the sale of minerals mined from planets to the sale of lifeforms and various artifacts. Piracy is also a viable option, although it is of course frowned upon by the powers that be!

The game will be very familiar in style to those of you who have had experience of the 'Star Trek' type games that were very popular many years ago. The game is quite a complicated strategy game, and given the opportunity it would be possible to play it for seriously extended sessions! It's controlled throughout using the mouse and a series of icons and menu bars, making it very simple to learn.

In terms of presentation, it is considerably more impressive than I expected for a game of its type. The graphics are all very cleverly drawn and the use of colour is quite spectacular in places, especially when viewing an alien being on the communications screen. Also, when landing, the image of the planet rotating majestically in its orbit is quite impressive.

Overall 'Starflight' could best be described as a very complicated game, which, if given enough time could be very addictive. There is more than enough 'depth' to enable the player to become engrossed in the gameplay and it is a great challenge which will enthral lovers of strategy games.

FACTS

Title: **STARFLIGHT**
Publisher: **Electronic Arts**
Price: **£24.99**
Reviewer: **John Davison jnr**

SIGHT & SOUND

The animated graphics are all very impressive, especially the close up view of the various alien creatures you meet on your travels

GAMEPLAY

A serious strategy game which will undoubtedly appeal to lovers of this genre

VERDICT

The development team set out to create a universe on a disk, and I can honestly say that they have successfully managed to do this. Very pleasing

STRYX

FACTS

Title: **STRYX**
Publisher: **Psyclapse**
Price: **£19.95**
Reviewer: **John Davison jnr**

SIGHT & SOUND

Graphics are colourful, but the game characters are very small compared to typical Psygnosis games. The sound is reasonable but could be better

GAMEPLAY

Totally infuriating to begin with, and it is not at first obvious how you should carry out your task

VERDICT

Very good. Not the best release from Psyclapse, but certainly worth checking out

Here's an example of a title which oozes quality and incorporates all sorts of graphic features which serve no purpose but for you to look at and think - Wow! Take for example disk one of this two disk set. It appears that the sole purpose of the first 'boot up' disk is to display an incredible graphics show!

Anyway - onto the game. The robots of the Dome Cities have turned against their masters and have grouped together as cyborg assassins with the expressed intention of ridding the galaxy of human life. Now I bet you can't guess what you've got to do, can you? Now it wouldn't by any chance just happen to be "Go and sort it all out before it gets out of hand", would it?

You play the part of Stryx, a humanoid who is described as being 'a bit special', the product of 'Project Alpha Secure', the meanest fighting, smartest thinking machine ever invented, half man half robot.

Basically the game is a scrolling platform and ladders affair with some extra little twists. The main body of the game takes place in the four domed cities. Each dome is linked to the central dome by the 'travel tubes' where you must traverse on a speeder bike in order to reach your destination. This particular section of the game is very much like a standard horizontally scrolling shoot 'em up in many ways, as your main objective, apart from reaching the end of the tube, is to destroy all of the enemies you encounter.

Within each dome is also an entrance to 'the Hive', a vast mining complex where energy crystals can be found. The Hive must be traversed using the mining craft, and as with the travel tubes, it is swarming with hostile androids and other deadly creations. The graphics in all of the three game sections are very colourful and are well up to the usual Psygnosis standard. Stryx is very difficult to get used to and at times can be highly infuriating. There were many occasions when I genuinely believed I was getting somewhere when suddenly I took a severe fall and died. The game is very complex and the few hundred words I have here is nowhere near enough to do it full justice.

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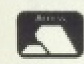
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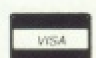


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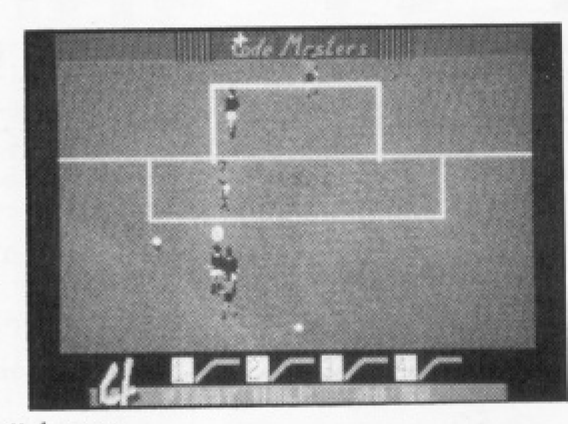


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ITALIA 1990



A proper priced budget soccer game, just in time for the World Cup! The packaging is the standard CD case and includes some excellent screenshots on the back which are a fair representation of the quality of picture inside. The game can be joystick or keyboard controlled and even offers multiple player involvement, with up to two players controlling the players of one side or participating in training games.

On first sight there appears to be quite a wealth of interest to be found within this inexpensive game. The training game wherein the player controls very large sprites through a sort of Superstars contest with squat thrusts, push ups and other gymnastic tortures is well worth playing especially if you have a friend to compete with. Sadly it does not bear any relation to the actual football game. The soccer game has well presented sprites and a well drawn pitch, control is good with the ability to pitch the ball, pass, hit or kick thundering great overhead lobs. The computer tends to feel that the difficulty factor has little to do with player skill but more in how often micro controlled players can scythe cynically from behind and thus slow the games progress with innumerable fouls. The first time I felt it represented a fair but not too difficult opponent, it did not have the skill of Kick-Off though control of players was perhaps better and the graphics certainly were better. On the second game I found the failing in the program and since then have never won by less than 4 - 0. Unfortunately the computer allows the player to pick the ball up in his or her own half dribble it with the power kick ready and launch a long hard lob from well inside your own half straight into the opposing goal. This is fine for the first few games but as may be imagined, becomes somewhat less than enthralling as time goes on. The computer does not pick this up and as such there is little challenge in the game.

Overall the mechanics and graphics are excellent with acceptable spot effects. The second game is not quite strong enough to stand on its own but does provide diversion from the predictability of the soccer game.

FACTS

Title: ITALIA 1990
Publisher: Codemasters
Price: £4.99
Reviewer: Damon Howarth

SIGHT & SOUND

Graphics are excellent well drawn and controlled, the sound could be better although the loading tune is reasonable

GAMEPLAY

Once the long ball down the middle into the net is found the game is very pedestrian, slightly more challenge in the training room

VERDICT

There are many better competitors about, not many as artistically successful but most have better gameplay - one for egotists

RENAISSANCE

FACTS

Title: RENAISSANCE
Publisher: Impressions
Price: £19.99
Reviewer: John Davison jnr

SIGHT & SOUND

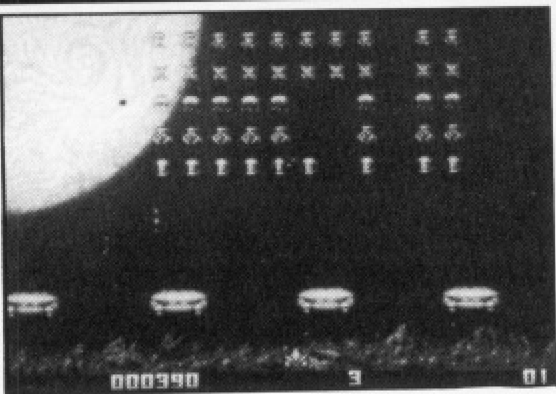
The contemporary versions have some superb graphics and sound effects, whereas the 'classic' versions are faithful to the originals

GAMEPLAY

All are truly addictive, as would be expected from such classic games

VERDICT

Certainly worth checking out if you want to get copies of some old classics



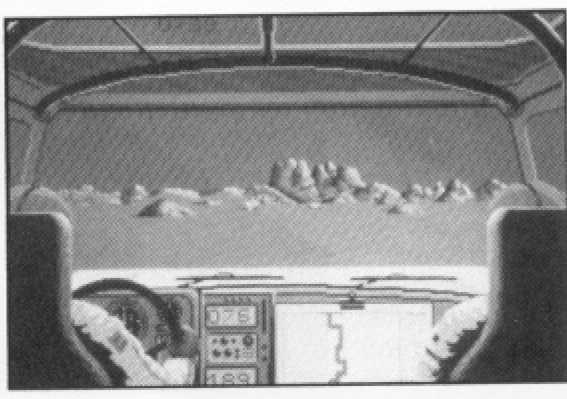
Renaissance or 'rebirth' is probably the best possible title for this collection of games from software house Impressions. What Renaissance offers is a set of four of the most famous arcade games ever created in both original 'classic' and modern 'contemporary' versions. The four games are Invaders (Space Invaders), Rockstorm (Asteroids), Megapede (Centipede), and Draxians (a version of Galaxians).

The 'classic' versions of the games use simple graphics and sound, emulating the original arcade machines which everyone knows so well. The contemporary versions however incorporate some new modifications which bring the games more up to date. All four contemporary versions have vastly improved graphics and sound and look considerably more impressive than their classic counterparts. In all cases the graphics look more solid and are colour shaded to superb effect. Possibly the most effective contemporary game is 'Rockstorm' which is a beautiful development of Asteroids. The rocks are excellently drawn and the ships are minutely detailed to give a great 'modern' appearance to a game which is well over ten years old (a lifetime in the world of computers!)

To describe the separate games would be pointless as, unless you've been living on another planet, you undoubtedly have seen or indeed own at least one variant on these games. They originate from the time when all games seemed new, exciting, and addictive, and it's easy to detect their influence in many of today's games, which often are merely very elaborate versions of them.

In terms of playability it is difficult to beat these old classics. There are no complicated and elaborate goals which you have to achieve, all that is necessary is that you shoot anything that moves with the intention of gaining a high score and saving the Earth from a fate worse than death at the hands of the alien Nasties! Also, the urge destroy more aliens each time was a gripping one, and once you'd started to play it was difficult to deny yourself 'just one more go'.

PARIS-DAKAR RALLY



This game presents an interesting concept in simulations - to follow the path and stages of the now infamous Paris - Dakar Rally in one of the remarkable off-road vehicles. The game offers the choice of three levels either basic vehicle, custom vehicle or race vehicle. The further from standard you chose the faster you can travel but the more likely you are to break down. Sadly from my point of view there was no option to try the trail bikes which are hitting the motorcycle market even though they are featured on the cover.

The game is packed in a sturdy box showing accurate screenshots of the between stage stills and comes with a comprehensive manual. After overcoming the copy protection following the advice of the book for first choice is wise - take the standard car and just try to finish.

There are two types of stage, the race stage and the navigational stage. In the race stage there is a marked out road across desert wastes (common outside Paris!) which you can traverse or not according to your whim or skill with the mouse. The road is far from even and bone jarring jolts occur with frighteningly real sound effects. There is the option to navigate by compass but sadly I found much in common with Maggie's little boy when trying this. The car is controlled by mouse or optional joystick and these cars are all automatics so no gear shift is needed. The overland stage is similar to this but there is no marked route and it is up to you to navigate from A to B as quickly as possible.

As a reward for completing a stage a picture will appear representing your journey. The actual race stages are very well done and the control is very similar to that found in the Ferrari simulator, it is possible to race as in the normal race track style of game and the various vehicles that appear are good replicas of the vehicles normally concerned. All the graphics flow smoothly with many whimsical touches about the game, I especially liked the tracks festooned with bits of broken car intermingled with the skulls of desert creatures.

This is a game for the thinking boy racer and I would recommend it to anyone who fancies a different sort of race.

FACTS

Title:	**PARIS - DAKAR RALLY**
Publisher:	**Tomahawk**
Price:	**£24.99**
Reviewer:	**Damon Howarth**

SIGHT & SOUND

The graphics and moving special screens are well done and the sounds vary from the frighteningly realistic to the adequately sampled

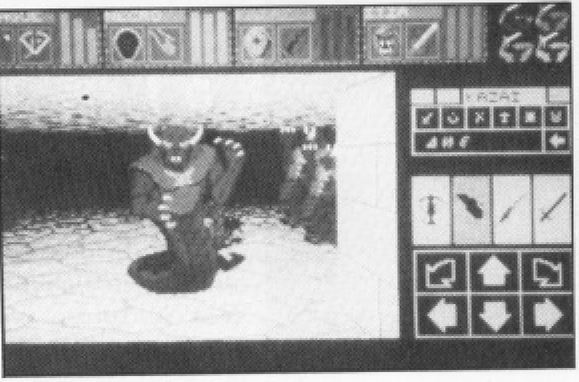
GAMEPLAY

The game works well and achieves all it sets out to do, it takes practice although the basic level is very forgiving

VERDICT

Well worth buying if you have any pretensions to simulation driving games. Remember though it is not Pole position and takes some thought

CHAOS STRIKES BACK



FACTS

Title:	**CHAOS STRIKES BACK**
Publisher:	**FTL/Mirrorsoft**
Price:	**£24.99**
Reviewer:	**John Sweeney**

SIGHT & SOUND

More wonderful graphics and animation-

GAMEPLAY

The mix of exploration, problem solving and high-speed, mouse-driven fighting, spell throwing, and dodging is superb

VERDICT

Highly addictive. If you liked Dungeon Master then buy it NOW!-

More of the best Dungeons and Dragons style game ever! Officially billed as Expansion Set #1 for Dungeon Master, you don't *actually* need to have DM in order to play it! You do however need to have *played* enough of it in order to know how to cast all the spells! You can bring your old characters across from DM, or select from 24 brand new high-level characters.

If you have not seen Dungeon Master and you are interested in D&D, RPG, Fantasy, or just a superb game then see the reviews in issues 33 and 34 or beg, borrow or BUY a copy of it. You won't be disappointed.

CSB is not for the beginner! It throws you straight in the deep end - in the dark, attacked by hordes of very nasty, giant, poisonous worms in a locked room! Gameplay is identical to DM but with new monsters, weapons, puzzles, traps, and ten new 32x32 levels. There are basically eight separate paths (two for each class - Fighter, Ninja, Wizard, Priest) which weave across all the levels and only meet in a few general areas. There are vast numbers of teleports and pits, some of which move you between the paths. And with some of the teleports being invisible it is very easy to get lost!

If you like this type of game I need say no more, so let's use this space for some hints:

Prison: There are two secret doors. You can only open one cell - reboot if it won't open.

Start: YOU are generating the worms by walking on a certain square. Don't miss secret doors: east of first room; side passage from "Supplies".

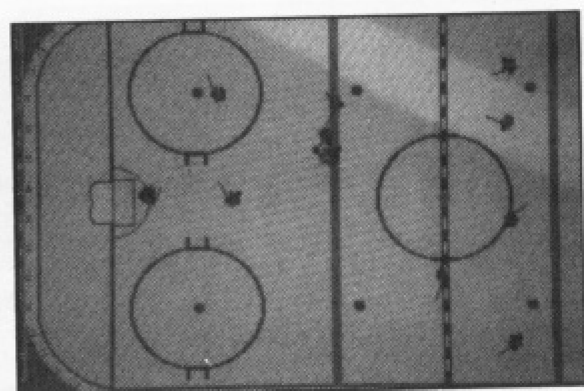
Junction: The corridors from the junction have random(?)/timed(?) teleports to identical corridors. Counting the start as level zero then you may be on -3 (the real junction) or -1 or -4! Very confusing!

Lost? Go down. All four paths meet at the bottom (level -5) through secret doors to a teleport back to the junction.

Special items: Some items (e.g. Dragon Armour) are distributed randomly at the beginning of the game.

Diabolical Demon Directors: You can't reach all paths initially. The NE pit blocking the way to the Ninja route is the nastiest (controlled by eye on wall near Turquoise keyhole).

WAYNE GRETZKY HOCKEY



The packaging informed me that this was the same company who had produced my favourite American Football Simulation (Gridiron).

I loaded the game from the first of two disks while taking time to read the very comprehensive manual, which explained that the game was a one or two player strategy and arcade game. The copy protection entailed identifying a player from a page in the book. This should not be so difficult except that the same pose with slightly different shadings is used and at times the procedure is rather like an IQ test! Having passed this test I entered into a game that offered me a bewildering selection of menus and choices.

Careful perusal of the book showed me what I wanted and I selected the 'play and coach' option. This meant that not only did I control one player with my mouse but I also called substitute teams on to the ice and shuffled players round for various situations.

The play was fast and furious and I found it necessary to select the slower option with the larger guide cursor. Your player follows a cursor around the screen, the distance from the player regulates speed and the direction is the point of aim of the skater. The graphical representation of this fast sport is excellent, as are the penalty calls where the referee will make the appropriate hand signals and the call is signalled by words as well.

Further into the game I was amazed to witness a fight (crucial to so many ice hockey games!) in digitised video replay. Indeed the back screen shows various replays and scoring fireworks, which all added a great deal to the atmosphere. The gameplay was excellent and as practice made me at least able to spot the puck I actually scored a goal- sadly the opposition did a lot better than that!

The icing on this particular all round simulation cake was the stats chart wherein every action from penalties suffered to goals scored is logged and thus monitoring your team is a simple(?) matter of course. If you just like mouse wiggling then you can allow the computer to coach or you can coach as the computer plays. or you can just watch the computer play against itself. If you are an ice hockey fan or even just interested this game is well worth considering.

FACTS

Title:	WAYNE GRETZKY HOCKEY
Publisher:	Bethesda Softworks
Price:	£24.99
Reviewer:	Damon Howarth

SIGHT & SOUND

Noisy and well digitised, sprite handling is excellent and fast. Spot fx are apt and well handled

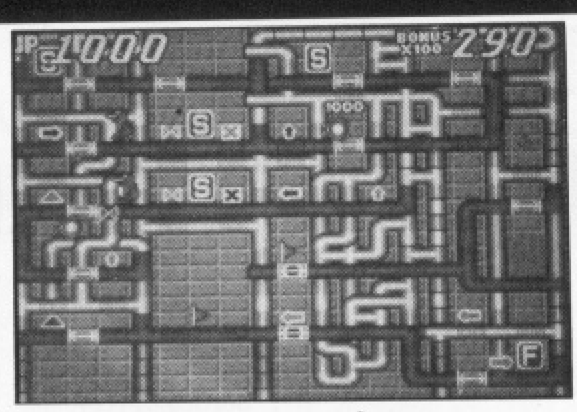
GAMEPLAY

So good I felt like I'd been playing for real. Fast, user friendly, and fun

VERDICT

Go on buy it, even the not so sporty should like it

PENGUIN



FACTS

Title:	PENGUIN
Publisher:	BWare Software
Price:	Damon Howarth
Reviewer:	£19:95

SIGHT & SOUND

Very good pictures, well animated and a lively soundtrack

GAMEPLAY

Infuriatingly funny, very tricky to play well and a good all round effort

VERDICT

This could have been a budget game judging from the packaging, but it is innovative and deserves a looking at by prospective buyers

Penguin is an interesting and slightly different sort of platform and ladders variant. The ideais to guide between 1 and 4 penguins through various maze tracks by using the mouse to move obstacles or provide bridges and thus allow the birds to make it to the exit without falling into acid pools or being energy drained.

The sound is quite fitting being fairly jolly with occasional simulated penguin squeaks. The system of control is quite novel and entails the player picking various icons up from the map to place in other locations in order to expedite the progress. Since the game moves fairly quickly any option above a one penguin control is a little frantic. The maps are quite complex and thus routing a way through becomes steadily harder. Since an icon may only be placed in a slot designed for that particular object there is a great deal of peripheral vision needed to put the dangerous or handicapping objects away from the route desired.

Fortunately there are various methods to pause the game and the Penguins and this allows for breathing space. For masochists with the STE there is an option to use the Blitter chip, Quite why anyone would want this to run faster is beyond me, it is quite hard enough! The game shows much loving care but a surprisingly low key approach to packaging. It comes in a wallet type of folder with a piece of yellow A4 for the instructions. In this era of budget games the packaging does not justify the almost £20 price tag but on the other hand the game as a whole is well presented with very busy screens and useful menus. The game is fun and makes a change from jumping and bouncing about the screen. The game is well worth trying and shows it was created by someone with a sense of fun.

There are apparently plans afoot to bring more data disks out to expand the perils of the penguins since the instructions advertise their imminent arrival, however since I have had great difficulty making it past the third screen with one penguin that option would seem to appeal only to a dyed in the wool pengomaniac.

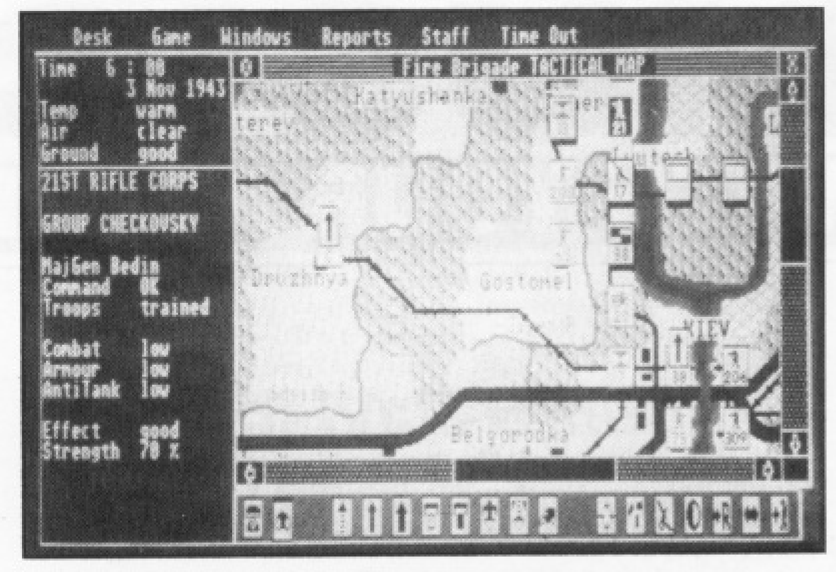
FIRE-BRIGADE

THE BATTLES FOR KIEV

Fire-Brigade is a simulation of the vicious battle(s) for Kiev in late 1943. This was a very intense and bloody fight on both sides, and, as in most conflicts of this type (and especially conflicts in Russia), success depends more on the logistical support of the attacking army than any other factor.

The first thing to strike you when you open Fire-Brigade is the manual, which although based on the Mac desktop version is still easy to use and well laid-out. A tutorial scenario has been included, and the authors have no hesitation in throwing you into the fray as quickly as possible. This scenario is not only an entertaining game in itself, but also introduces the basic controls needed to master the game. Each icon is explained in a user-friendly and, thankfully, illustrated way. After about an hour you will be able to go on to one of the more advanced scenarios, each of these lasting from three to eight hours (according to the manual) or considerably longer (if you are like me!).

You can get an overview of your main command centres (Korps/Army HQs) on the Strategic Map, but most of the action takes place on the close-up Tactical map which displays all your units (about thirty each in the biggest scenario). This is a standard Gem window which you can scroll in the normal manner with the mouse and the scroll bars. The whole game is mouse driven, either issuing commands (Pursue, Attack, Assault, Hold, Defend, Delay, Withdraw, Travel) via icons to your half a dozen or so HQs or working through menu windows to allocate support (ground, air, transport, supply, etc.) or reserves.



It is very flexible. You can issue any commands in any order before telling it to run the Move/Combat phases - which are delightfully swift! Then you can review lots of reports in any order. Fire-Brigade contains some excellent features, from the easy to understand battle reports (also showing how the historical battles fared at similar times) to the 'Staff' feature, which allows you as the General to concentrate on the overall view of the conflict, not having to worry about minor details and logistics. The further you advance, the more important support is, and therefore it is vital to keep an eye on the state of your troops by way of the excellent OPS function provided. This function also show the level of your troops morale, another important consideration. As the battle commences, your troops (either the Russians or the Germans) are in good spirits, but after a time you will find units withdrawn automatically to regroup 'off-map' due to having been 'chewed out so badly' as the manual subtly puts it.

The entire approach of the game is similar to having a human opponent around a games table with a couple of beers, from the initial expletive when you try to load the game in Low Res, to the chatty feel of the manual itself. However, the game also provides a few annoyances. Some of the icons are very similar to each other, not enough to cause difficulty, but just enough to make you have to check each time you want to issue an order to a unit. Units on the map appear very regimented(!) in close proximity, as if laid out on grid lines, and not in the kind of confused muddle one would expect. The map itself (easily understood and well laid out) changes during the game to reflect night-time and weather conditions, but some of the combinations used make its interpretation a little different. You can play on Colour or Mono systems, but if you have a Colour 520 the map only uses two colours (but is still perfectly playable). Single-sided drive owners will need someone to copy the files on to two disks.

Wargaming beginners beware, you will be confronted by phrases such as "historical step-loss ratios" even in the Tutorial, but don't worry - the manual is very comprehensive and if you persevere all will become clear!
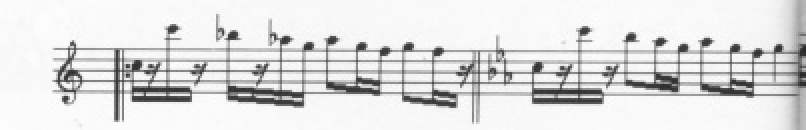
Computer wargaming is a fine replacement for table-topping, needing less space, no opponent and having save game options but still fails to capture the look of tank formations thundering across the Eastern Front. Fire-Brigade suffers a little from this lack of 'feel', but more than makes up for it in the rest of the game which is entertaining and more than capable of keeping you stuck in front of your ST for many a long hour.

Many thanks to Roger Gerrish for the bulk of this review and the many hours spent playing the game!

- ***GAMEPLAY** - Well implemented, complex, comprehensive, simulation of the battle for Kiev, for one or two players on the same or linked computers*
- ***GRAPHICS** - Utilitarian, but more than adequate for this sort of game*
- ***VERDICT** - Very good value if you like sophisticated wargames*

Title:	**FIRE-BRIGADE**
Publisher:	**Panther Games**
Price:	**£29.99**
Reviewer:	**John Sweeney**

MAKING MUSIC WITH YOUR ATARI



John S Davison's regular guide to all the ways of making music on your favourite computer

Hi, everyone! Here we go with another Making Music column, and this one's rather special - for me anyway - as it's the one hundredth article I've written for Page 6 Publishing. They haven't all been published, of course, so I won't do any celebrating until the Editor actually puts one hundred into the magazine! Anyway, enough of that, let's get on to this issue's topics.

CHEAP AND GOOD

Good MIDI software for the ST can be very expensive, with much of it costing well over £100. It's therefore quite something to find good quality MIDI music programs for just £2.95, and that's exactly what we've got in the Page 6 PD Library. Two recent additions in particular offer excellent quality and outstanding value for money, these being the PSSED voice patch editor and the Cosh Sequencer. I intended covering both of them this issue, but the MIDI Music Show won the battle for the space, so I've left Cosh for next time.

PSSED is a voice patch editor for the Yamaha PSS series of home synthesiser keyboards (PSS EDitor, geddit?), and follows hard on the heels of Dave Gymer's programs, as discussed in the last issue. Incidentally, Dave has updated his patch editor - more about this later. Unlike Dave's collection of programs, PSSED concentrates purely on the voice patch editing and librarian functions. It was written by Bryan Kennerley of Rhyl, Clwyd and is now available from Page 6 as PSS Disk No. 2. The disk also contains comprehensive documentation, which includes a description of what all those voice parameters actually do! Marvellous!

On loading PSSED the first thing to strike you is its professional looking screen presentation, which uses a non-GEM custom windowing system. Bryan claims this makes for faster operation. There are eight windows in all, but these are neatly fitted together to give the screen an overall clean and uncluttered appearance.

GRAPHICAL LEDS

Three of the windows contain parameters for controlling the PSS's digital waveform generators, or 'operators' as they're known. There are 36 parameters in total, and these can be changed simply by clicking the mouse on them. Some of the parameters are toggles rather than values, and in this case the parameter has a red 'Light Emitting Diode' style of indicator next to it, rather like those found on the PSS's front panel. Clicking on the parameter toggles its value, 'on' being shown by a glowing LED alongside.
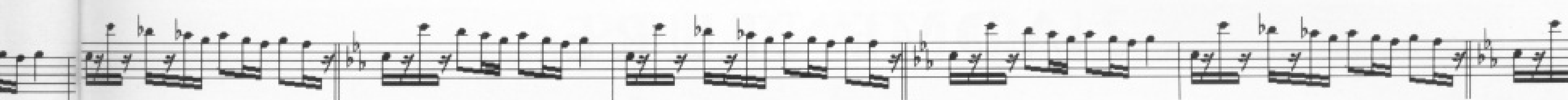
Another window contains the Bank Selector, a series of five mouse selectable buttons, each with an associated LED. These correspond to the five voice bank selector pushbuttons on the PSS's front panel, and work in the same way. Clicking on a button selects the associated synthesiser memory bank, again indicated by a glowing LED. PSSED holds the voice parameters for the five banks in memory and selecting a bank results in its parameters being instantly displayed in the appropriate parameter windows.

The MIDI Send/Receive window allows you to send the five edited voice banks to the PSS, or to request and receive its five banks from it. This also automatically switches the PSS to the voice bank currently selected on the screen, so you don't have to touch the PSS's controls at this point.

A click on the Library button brings up the Library screen. PSSED allows up to four patch libraries to be loaded and handled at any one time. A library is a set of 100 named voice patches, and two are supplied with PSSED. One contains the 100 preset voices permanently programmed into the PSS's ROM, while the other contains 13 examples of voices produced with PSSED, plus 77 spare slots you can use for your own patches. You can also have up to two more libraries (another 200 voice slots) to fill up as required. Any library can be saved to disk or reloaded using the program's custom file selector, so its overall capacity for voice patches is essentially infinite!

There is one snag. Although I had absolutely no trouble running PSSED on my faithful old 520STM I've heard that there have been problems using it on newer versions of the ST, and not just the STE either. The author is now aware of these and hopefully by the time you read this he'll have produced a version that runs reliably on all ST's. If in doubt call Page 6 to check it out before you order a copy.

In my opinion PSSED is a piece of quality software, and is a pleasure to use. Once more we have to thank the author for releasing it into the public domain - especially as I believe this one would make the grade as a commercial product! Thanks Bryan - we're all in your debt!



THE MIDI MUSIC SHOW

The very first show dedicated to all things MIDI took place on 7-8 April at the Novotel, Hammersmith, London. I went along to check it out on behalf of Page 6, and to find things that might excite all you MIDImaniacs out there.

The show attracted 44 exhibitors, far fewer than most computer shows, but then this is a rather more specialised event. They were mainly small companies, in fact virtually all of the big instrument manufacturers stayed away - no Yamaha, Roland, Casio, Kawai, Korg, etc. The exception was Ensoniq, who not only had a stand, but also sponsored many of the seminars which ran throughout the two days. Unlike computer shows there were virtually no 'box shifters' present, and only a couple of stands selling cheap disks and accessories. There were still bargains to be had though, for instance one stand was selling Steinberg's Pro-24 sequencer for just £110 and many were offering 'special show prices' on their wares.

My initial impression was that there wasn't much to see, but I was still there six hours later when the show closed, having had a thoroughly enjoyable time! I've highlighted a few things that caught my attention below and have included phone numbers in case you want to get more information.

One of the first things to emerge from the general cacophony of the exhibition hall was the glorious sound of a Bach Brandenburg Concerto emanating from the Digital Music Archives stand (phone 01-624-8774). DMA was set up by Richard Gonski and Francis Monkman (of Sky fame), and is dedicated to producing sequenced versions of classical masterpieces. They sell sequencer data disks in all the major sequencer formats, allowing you to produce your own unique versions by changing the voices, etc., to your own tastes. The disks cost £19.95 each and sound magnificent!

Quinsoft (phone 0737-243066) is another small company that caught my eye. Main products to date are a couple of voice patch librarians for Yamaha FB01 and advanced 4 operator synths (TX81Z, YS-100/200, etc.). These come complete with 480 and 512 voice patches respectively, and seem to offer astounding value for money at just £24.95 each. They're moving upmarket though, and their latest offering is a complete suite of programs designed to help with running a recording studio. Their next project is MIDI Magician, a generic editor and librarian. This is designed to handle any make of synthesiser and can also cope with things like programmable reverb units such as those made by Lexicon. This will be out by year end and is likely to cost around £150.

THE SAMPLING CRAZE

The current craze for using your ST as a sampler is still in full swing. Microdeal (phone 0726-68020) were showing Quartet, an exciting four voice sample sequencer now available for £49.95. This allows you to load up to 20 different samples into the ST and then play back musical sequences recorded in step time or in real time from your MIDI keyboard - using up to four different samples simultaneously! If none of the 100 samples provided meet your requirements you can record your own using Microdeal's Replay 4 sound digitiser cartridge (available separately at £79.95). Microdeal have lots of exciting new sampler products coming soon too. Watch out for Quartet Stereo, Stereo Master Sampler, Playback Stereo, and Replay Stereo, which seems to indicate the next craze will be stereo sampling!

For serious sampling Audio Visual Research (phone 0582-457348) were showing their new Pro-Series 12 sampler package. At £245 a time we're talking serious money here too! It consists of a 12-bit high quality sampler cartridge; an editor for manipulating the samples you record; 'Drumbeat', a full feature drum machine program; and 'MIDIplay', which allows you to play back samples directly from your MIDI keyboard. If this is beyond your means you could consider their Replay Professional package, which offers similar (but lower quality?) functions for £129.95.

Most unusual product on display was MIDI Metro, a MIDI driven digital metronome from Q-Logic (phone 0796-2001)! This is a standard 19 inch rack mounting unit with 8 lights arranged in a broad arc across its front panel. These flash on and off sequentially and in time with MIDI clock pulses, visually emulating the sweep of a conductor's baton. It's great for anyone trying to play along live with other sequenced music tracks, but at £299 it's probably of more interest to professional musicians.

Finally, a word about the seminars. I attended two of these - one on synthesisers and one on sampling - and found them both fascinating. They were given by two experienced professionals who obviously knew what they doing with the Ensoniq VFX and EPS instruments used for the demonstrations. They also provided a welcome break from the noise and bustle of the main show.

Overall, I found the show enjoyable. It wasn't as crowded as computer shows usually are, but was well enough supported for the organisers to want to run another one in the Autumn. Watch for the announcement.

SNIPPETS

.... *As mentioned earlier*, Dave Gymer has updated his patch editor to include more facilities. It can now upload the set of five patch memories directly from the PSS, or import those uploaded with the System Exclusive Librarian utility. It can also split the set up into five individual patches and save any or all of them to disk. You can also copy or exchange voice patches within the five banks to position them exactly where you want them. These improvements are well worth having, and the PSS Disk now includes the new version. Call Page 6 to find out how to get your old version updated.

.... *If you're about to buy* a more upmarket sequencer for your ST make doubly sure you check out the Steinberg products. They've just slashed their prices from £285 to £150 for the legendary Pro-24 package, and from £129 to £75 for Twelve. You'll probably pick them up even cheaper if you shop around.

.... *Lower still in price* is Ladbroke's MIDIStudio sequencer, which has just been reduced from £99.99 to £49.99. Ladbroke have also just introduced MIDIStudio Master, an uprated version of MIDIStudio with over 30 new features and costing £129.99.

.... *On the MIDI hardware front* there are still some excellent Casio synthesiser keyboard and expander module bargains around. Also a few from Yamaha and Kawai from individual dealers. Check the music store adverts in the monthly music technology magazines for details.

That's it for this time. See you next issue with details of the Cosh Sequencer and (hopefully!) details of a brand new Page 6 audio cassette which demonstrates some of the fantastic sounds you can make via MIDI with your Atari 8-bit and ST computers. ●

FUTURE WARS
TIME TRAVELLERS

Hailed as a hi-tech animated adventure from France, this 'cinematique' creation by one Paul Cuisset has been busy scooping up awards for its completely innovative approach and implementation of the computer adventure game as we know it.

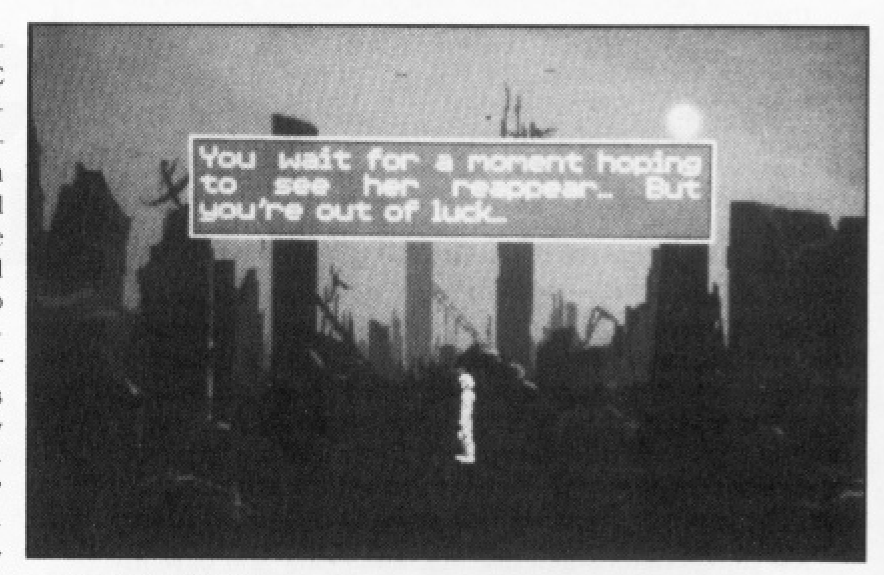
True, it is a joy to play and the puzzles are varied and many, yet playing this one with an ordinary television set hooked up to your ST can be a real strain on the eyes! This is because the vast majority of the more complex puzzles are graphically presented on-screen within an area about the same size as a cigarette packet. I found that searching this area with the cursor for a specific point was particularly difficult and very much a hit-and-miss affair - but you do come to terms with it eventually.

Conversely, the remaining 'full-screen' graphics as you move about an area are very pleasing on the eye yet, here again, you have to be very precise with the mouse-controlled character. It would be very easy to compare Future Wars with other games from Lucasfilms or Sierra On-Line but this really is a unique variation on the 'animated-adventure' theme.

Reading the game documentation you learn that Earth is secretly under attack from a race of time-travelling aliens known as Crughons and that they plan to sabotage our SDI-type defences BEFORE they are built! You are the reluctant hero whose task is (you guessed it!!) to save the World.

As the game begins, you are a humble window cleaner situated outside the upper reaches of a glass dominated skyscraper. Things begin to get interesting when you enter the interior of this building and once you've managed to dodge your boss and figure out the way beyond the first office then the game really hots up.

Your character is moved by clicking on the screen at a point that you wish him to approach, although this can be a little frustrating when you're in a hurry. The simple command menus are quick and easy to manipulate as are SAVE and RESTORE features. I recommend a thorough exploration of all the options before settling down and attempting to solve this adventure, as your 'vocabulary' is very limited to say the least. The 'OPERATE' and 'USE' functions, for instance, will vary considerably according to the circumstances and will invoke SHAKE, THROW, OPEN, CLOSE and many more - but it is easier than fumbling around the keyboard for the correct combination of words to input. This is, perhaps, just as well as several English words are misspelt or their meanings have changed during the translation!



There are many situations where timing is critical and I found myself having to SAVE on nearly every screen before daring to progress further or explore the current options.

As with other games of this genre, there are a number of sequences within the game that come under program control, allowing (or causing?) the player to just sit back and watch the action or read screens of text.

The copy protection method is reputed by the author to be the near-perfect solution to deter software piracy; the placing of a transparent gridded template over a coloured picture from the manual and clicking on the correct co-ordinate when prompted by the program. This is sometimes more difficult than it at first appears as some areas are very similar in detail if not colour and the program will unmercifully 'bomb-out' if you get it wrong causing a complete re-load from scratch!!

Minor criticisms apart, Future Wars is technically and graphically very well executed - although a colour MONITOR is highly recommended!! The program appears to be bug-free and runs like a dream, approaching the 'cinematique' experience intended by its author. I understand that Future Wars has taken about three years to come to fruition and I don't doubt it for a moment!

Title:	**FUTURE WARS:TIME TRAVELLERS**
Publisher:	**Palace/Delphine**
Price:	**£24.95**
Reviewer:	**John R.Barnsley**

GET A GOOD START!!

- ***EXAMINE the scaffolding and OPERATE the red button.***
- ***TAKE the bucket and OPERATE the window that your Boss used.***
- ***Enter the room, TAKE the red plastic bag from the little waste paper basket on the lower left.***
- ***EXAMINE the bottom right-hand corner of the carpet here and take the KEY.***
- ***Enter the Bathroom, OPEN the cupboard and TAKE the insecticide.***
- ***USE the BUCKET at the sink, OPEN the toilet door and take the little flag - it's that red dot in the centre of the door opening!***
- ***USE the full bucket over your Boss's door and OPERATE the door on the right.***
- ***Enter the room, CLOSE the door, EXAMINE the desk, OPEN the drawer and TAKE the paper.***
- ***OPEN the middle cupboard on the north wall, EXAMINE the typewriter and note the code numbers.***
- ***EXAMINE the wall map and carefully move the cursor around the inset map to locate a little hole, then USE flag in small hole.***
- ***Enter the secret passage which now opens, examine the box and key in the code - QUICKLY before the ceiling crushes you!!***
- ***Enter the obscure door which now opens, OPERATE the green button on the photocopier, put the paper in the slot, OPERATE the red button then quickly enter the centre of the white circle to teleport to the new time zone!!***

SUPER CARD INDEX

Super Card Index (SCI) is a development of a neat little database program called B.Base 2 produced two years ago by B.Ware. Like its predecessor SCI is intended to be easy to use (like a card index system), fast, reliable and inexpensive. It incorporates a number of improvements requested by B.Base 2 users, and has generally been uprated to make it more "professional".

It's supplied on a single sided disk with a 32 page indexed instruction manual. The disk contains the program itself, a conversion utility that lets you convert data between B.Base 2 and SCI formats and back again (and also to ASCII format so you can load the data into your word processor), plus a number of sample databases for you to play with. One of these is more than just a sample though, it's a complete set of British Telecom STD codes and exchange names, allowing you to search on either the code or the exchange. Very useful.

Although it's designed to be very simple it has enough functions to make it suitable for many home and small business applications, such as cataloguing collections of books, software, CD's or for maintaining name and address records, and similar tasks. As with B.Base 2, B.Bytes have faith in their own product and use SCI to hold all their customer data, and they claim it has performed faultlessly. Basic facilities include creation of a new database, adding records, filtering (searching) for records, and updating, editing, deleting, and printing them.

Like B.Base 2, SCI uses free format records, so there's no worrying about record structures, fields, or data types. Entering data is simply a case of keying in whatever you want, with up to 78 characters per line, and up to 16000 lines or 32000 characters per record. Maximum size of database is 32767 records.

To help you enter your data you can assign often used character strings to function keys, and input them with a single press of the appropriate key - potentially a big timesaver. The function key settings are saved to disk along with your database, and you can also import them from one database into another very easily.

Free format records do have their limitations. As there are no fields as such, you can't perform arithmetic on them or produce detailed customised report layouts, and this might restrict SCI's use in a business environment. On the plus side, this approach does let you merge several dissimilar databases into one larger database very easily. One big improvement SCI has over B.Base 2 is that you can have as many databases on a disk as you wish - B.Base 2 was restricted to only one.

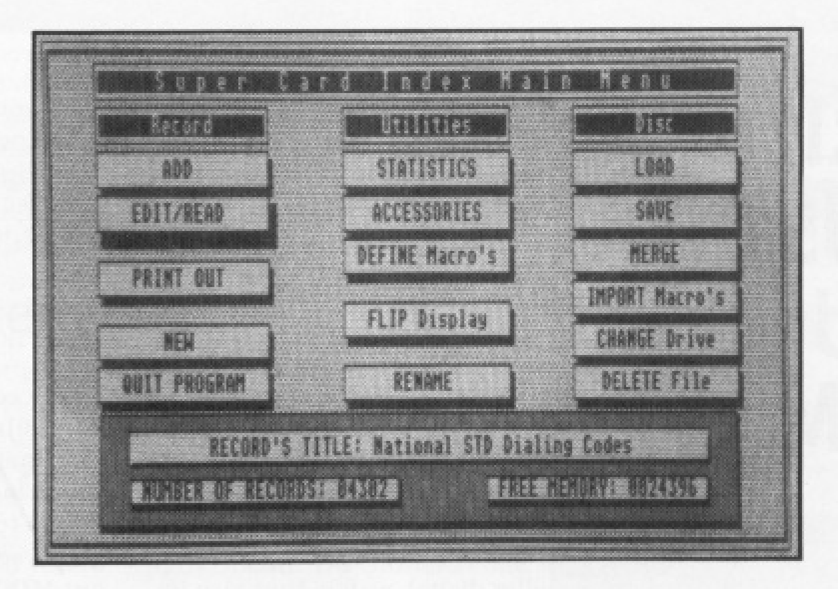
The database is held in ascending alphanumeric sequence in memory, so you're ultimately limited by your machine's memory size. However, for most home and many small business applications 512K is perfectly adequate. If not, you could always upgrade your ST's memory. The advantage of a memory resident database is its speed, and SCI certainly has plenty of that.

You can find records by manually searching through them individually, or by specifying a series of search criteria, a process referred to as "filtering". Up to four different filters may be set up, each consisting of a character string of up to 30 characters plus an AND or NOT operator. This allows you to find records NOT containing the specified characters as well as the more usual way of working. There's also a case sensitivity switch, permitting you to ignore or take account of capital letters as required.

The filtering process is likely to result in a subset of records which match the specified criteria. You can then quickly step forwards and backwards through them using the cursor keys. At this point you can also copy, delete, edit, add, or print selected records, or return to the filter screen for further filtering. You can also ask for statistics, which tell you how many records are in the database, how many filtered records you have plus the percentage of the total they represent, and the amount of free memory and free disk remaining.

The report printing facility provided isn't very comprehensive owing to the lack of individual data fields as mentioned earlier. However, you can control the overall appearance of the reports in terms of numbers of lines per page, characters per line, spacing between records, and which subset of lines in each record you want to print. This last item allows you to print out just the name and address lines in a customer record, for instance.

Overall, I found this an excellent program. It's very easy to use, fast in operation, surprisingly flexible, and it behaved perfectly during the review period. It's just the sort of program you need for quickly setting up all those little catalogue files you always promised you'd do on your computer but never got round to. It's one of those indispensable 'useful' programs that should be in everyone's collection and offers great value for money. Buy it.



'very easy to use, fast in operation, surprisingly flexible, and it behaved perfectly'

Title:	**SUPER CARD INDEX**
Publisher:	**B.Bytes/B.Ware**
Price:	**£24.95**
Reviewer:	**John S Davison**

PD WORLD

Paul Rixon's

ACCESSORIES -THERE JUST WHEN YOU NEED THEM

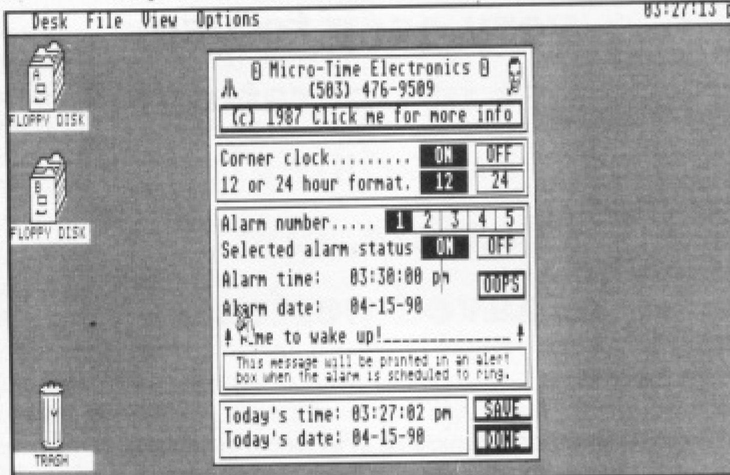
Have you ever wished you could toggle between your word procesor and a game at a click of the mouse button, or cursed at the absence of format and copy options in your spreadsheet? How may times have you had to re-boot and search for a simple program to print a directory or install a RAM disk? Wouldn't it be nice if all these utilities were already sitting within the application? Well, of course, if the software you are using has access to GEM then there is a simple solution, in the form of the wonderfully versatile desktop accessory. Although a few commercial packages have been, and are being, released, the vast majority of desktop accessories are available in the Public Domain or as Shareware. This month I've been examining a number of accessories from the ever-expanding PAGE 6 library, and unearthed a surprising variety of goodies.

STE CONTROL PANEL

First of all, a note concerning an accessory that everyone should already have - the Control Panel. Atari's offering to configure your system has undergone a number of changes since the original release, culminating in a 4096 colour revision for the new STE. Unfortunately, Atari (true to form) failed to complete this in time for the release of the enhanced machines, with the result that many were supplied with an older, incompatible Control Panel. If you own an STE and can't find sixteen positions on the colour sliders of your panel, you need to acquire the updated version. It can be obtained by posting your 'UK Language Disk' to Silica Shop's technical helpline at P.O.Box 200, Dartford, Kent. DA14 4DZ.

A LOT OF CLOCKS

One aspect of the Control Panel that's been extensively bettered in the Public Domain is the built-in time-keeping function. A variety of clocks may be found in the **DESK ACCESSORIES 1** collection, including analogue dials that can be sized to fit the available space, and a much smaller digital 'watch' that also incorporates the date. The only slight drawback is that these require you to use the Control Panel for adjustments. **DESK ACCESSORIES 2** features a much more sophisticated utility which optionally fixes a digital clock into the right-hand corner of the screen on boot-up. You can subsequently modify both time and date, choose 12 or 24 hour formats, toggle the display on and off and also set up to four alarms! Once a specified time is reached, a pre-defined message is written to the screen and chimes sounded while the program waits for you to click an acknowledgement. Settings can be saved to disk, so if you have a battery powered clock card this could prove very useful indeed. Also on this disk is a neat analogue clock and perpetual calendar that can be initiated and adjusted without any keyboard input. If, like me, you're prone to forgetting to set your clock altogether, the **DC CLOCK** accessory in **DESKTOP UTILITIES** could provide a useful reminder. Once installed, the accessory will prompt you for the correct time and date when you perform a cold boot. Subsequently clicking on the accessory will toggle on and off a compact digital display.



Alarm calls while you work!

DISK MAINTENANCE

Many commercial packages are equipped with a less than adequate range of disk maintenance tools - this is reflected in the large number of accessories intended to relieve such deficiencies. For a grand selection of DOS commands, check out **MINIDOS** found on **DESK ACCESSORIES 3**. This comprises no fewer than thirteen functions including less-common options to compare files, examine disks, print directories and recover deleted files (come on, admit you've needed it too!). **DISK UTILITIES 3** offers three useful accessories that will complement just about any application. **PRIVATE EYE** is a small program that provides an instant report on the status of your system. The parameters displayed include mouse click speed, drive seek rate and memory statistics. **FORMAT** lives up to its unimaginative name - but at an astonishingly speedy pace. It can format a double sided disk in a mere 18 seconds! Rounding off the trio, **FORMAT PLUS** is a straightforward formatter, conspicuous by its ease of use. There's a whole lot more on the disk besides these accessories, of course.

THE FAMOUS DC ACCESSORIES

Probably the most impressive formatting utility on the ST is the brilliant **DC FORMATTER**, offered as Shareware by the famous Double Click Software. The accessory version included in **CLASSIC UTILITIES** doesn't include the copy functions of the full-blown program (which you'll also find on this disk) but can perform a wide variety of formats with 9 or 10 sectors across 80 or 82 tracks, fast or normal reads and MS-DOS, Magic Sac or executable bootsectors. On the same disk you will find the

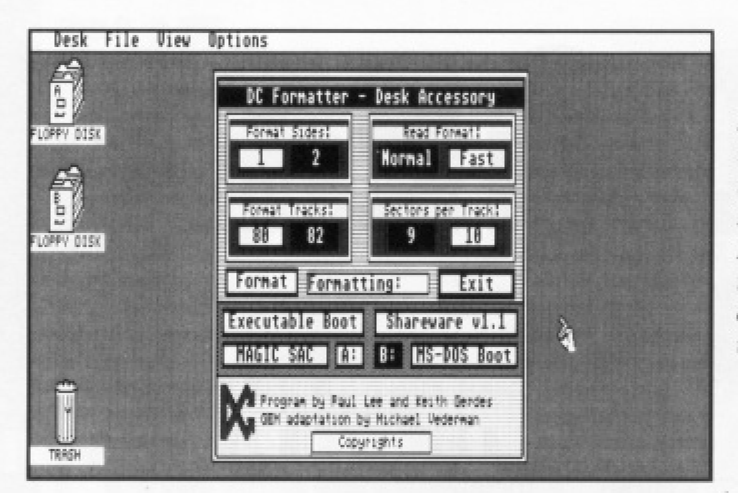
INTERSECT RAMBABY, an excellent accessory for installing RAM disks and print spoolers. Rambaby presents options to specify the size and drive of the RAM disk required, and then writes an AUTO file to save the chosen configuration. If you're the lucky owner of a hard disk system, **HDUTIL** on the **ACCESSORIES & UTILITIES** disk could be almost essential. As well as displaying general information about your hard disk, it allows you to search through directories for a specified file. There's another utility of interest to hard disk users in the **QUICK & MYSTIC** compilation - a small program run from the AUTO folder that allows you to load accessories out of an 'Accs' folder, rather than the root - a much tidier solution. Here you'll also find the eponymous Mystic Formatter whose purpose is to format disks in the background while you continue with other work. If time's at a premium, this could be an invaluable asset.

GAMES AS WELL!

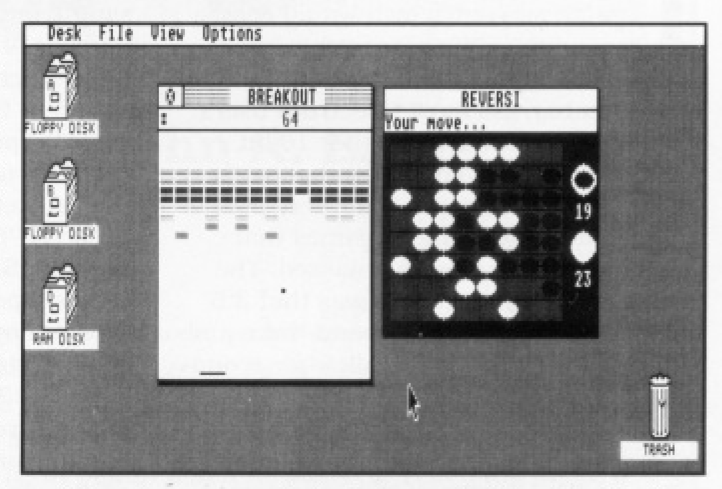
Not all accessories are serious... If you're a fan of **REVERSI** (or Othello) then grab a copy of **DESK ACCESSORIES 2** for an excellent translation of the classic game. The computer plays an intelligent match and you may soon find yourself loading up the accessory disk simply to play the game! This is definitely one of my favourites, although the super version of **BREAKOUT** on **DESK ACCESSORIES 1** ranks a very close second! - yet another great game that will keep you occupied for hours if you're not extremely careful! Elsewhere, there are a number of 'fun' accessories which you are unlikely to want to install on your regular disks but can be entertaining, if not somewhat alarming, to experience - a 'melting' desktop on the **ACCESSORIES & UTILITIES** disk, for example!

WHY ONLY SIX AT A TIME?

One of the drawbacks of accessories is the number you can fit onto your desktop. The official limit of six accessories can be rather frustrating given the enormous variety to choose from! Fortunately, there are a number of ways to circumvent the restriction. **ACCESSORY LOADER** is a clever program that enables you to store as many accessories as you like on a single disk. When you boot up, you are presented with a menu from which you can select the six you want to use. The program then automatically renames chosen accessories with an 'ACC' extender and unselected ones with an 'ACX' extender. You'll find Accessory Loader on **DESK ACCESSORIES 2**. But what if you need more than six accessories simultaneously? If you have sufficient memory, **DC STUFFER** is the program you need. This is an excellent utility that allows you to place up to thirty-two accessories into a separate folder called 'Stuffer'. DC Stuffer sits in the root as a normal accessory, but selecting it provides access to the contents of the 'Stuffer' folder via a secondary menu. DC Stuffer is one of several ingenious accessories on the **DESKTOP UTILITIES** disk. If memory is limited you might consider one of several accessories that combine various functions into one. Also on this disk, for instance, there's a superb 'shareware' package combining a clock, calculator, phone book and memo pad with facilities for copying disks and displaying free RAM.



Double Click Software have built an excellent reputation for top quality shareware programs. DC FORMAT is just one of the range of DC accessories and utilities available in the public domain



Time for games - but mind you don't get hooked!

THE ULTIMATE SOLUTION

You may have thought it would be a good idea if the best desktop accessories were all gathered together and released as a single compilation - well, new to the library this issue is the appropriately named **ULTIMATE DESKTOP ACCESSORY COLLECTION** containing over 40 individual accessories with 21 pages of documentation on a packed set of two disks! Amongst an exciting jumble of goodies - including many of those already mentioned in this article - there is a sophisticated calculator capable of handling just about any mathematical function you are ever likely to need, a Command Line Interpreter for MS DOS and CP/M enthusiasts, a super mini-text editor and a replacement for the Control Panel incorporating almost every option you could think of. A splendid mixture!

REMEMBER SOME ARE SHAREWARE

Out of space already! If you would like to suggest a topic for a future PD World, feel free to drop me a line! To obtain the disks mentioned in this article, please check the box below - bear in mind that these contain many more programs than the selected few I've described. Some programs are Shareware which means that the author would like you to forward a donation if you find his software useful - doing so may ensure that there will be many more terrific programs like these written in years to come. Bye for now!

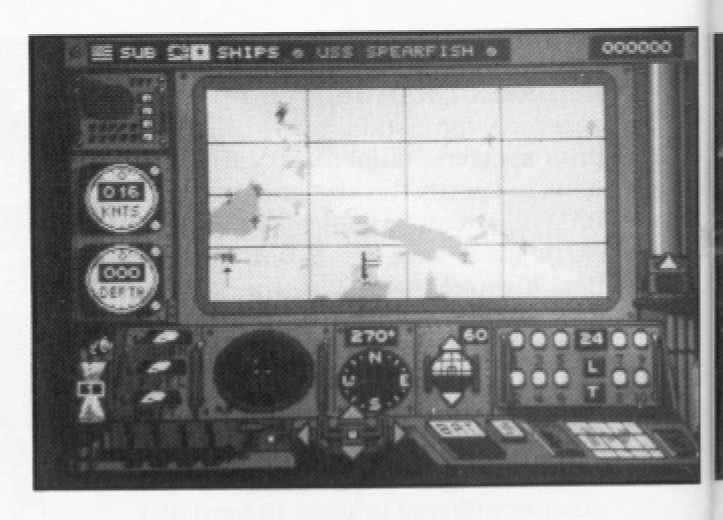
HOW TO GET THEM

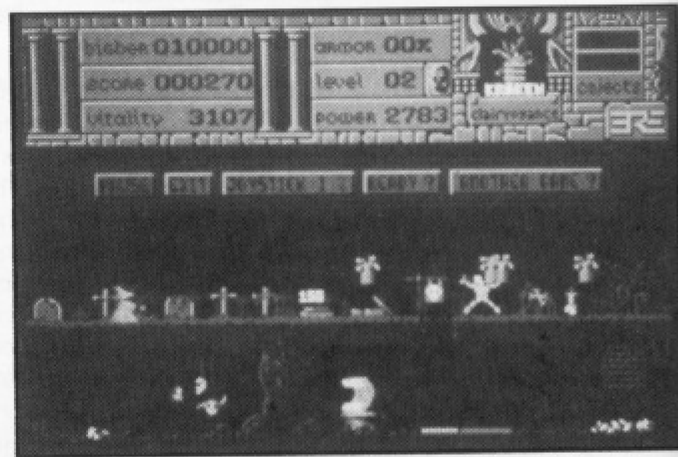
All of the disks referred to in this article are available from the PAGE 6 PD library. Each has a unique reference number which you should use when ordering or enquiring about the software. Please contact PAGE 6 if you don't have a copy of their Accessory Shop leaflets and check the system requirements for each disk. The disks mentioned in this article are:

ST10 - DESK ACCESSORIES 1
ST40 - DESK ACCESSORIES 2
ST70 - DISK UTILITIES 2
ST80 - DESK ACCESSORIES 3
ST93 - ACCESSORIES & UTILITIES
ST132 - DESKTOP UTILITIES
ST181 - CLASSIC UTILITIES
ST182 - QUICK & MYSTIC
ST270 - ULTIMATE DESKTOP ACCESSORY COLLECTION 1
ST271 - ULTIMATE DESKTOP ACCESSORY COLLECTION 2

Prices for standard disks are £2.95 each or £2.50 each for 10 or more
Write to PAGE 6, P.O.Box 54, Stafford ST16 1DR.
Telephone 0785 213928 or FAX 0785 54355 with credit card orders

BUDGET DAYS





reviewed by Damon Howarth

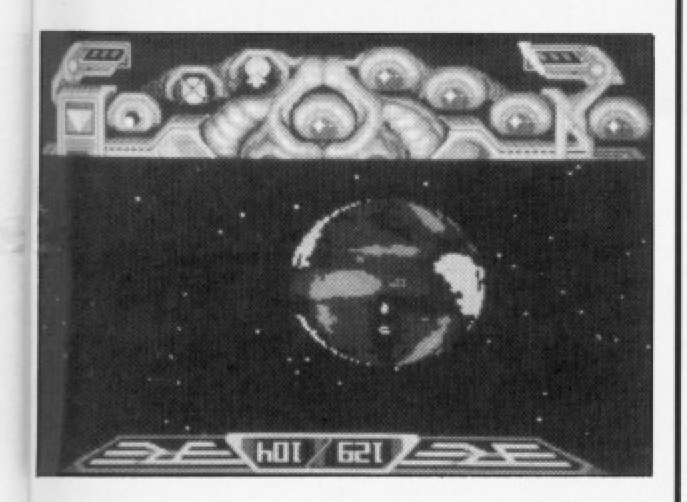
In the early days of the ST a cheap game was one which would cost about £19.95 and possibly had a graphics and programming content that would embarrass most Spectrum users. There was always the cry that 16 bit games were far too pricey and as such meant many owners became very poor or lacked the large stable of games that their 8-bit counterparts amassed. The publishers answer to this was that 3.5" disks were very expensive and there just was not the user base to allow for economies of scale. With the rapid expansion of 3.5" PCs and the 16-bit, the economics of scale can now apply and publishers now see the benefits of low price games. The budget labels have arrived.

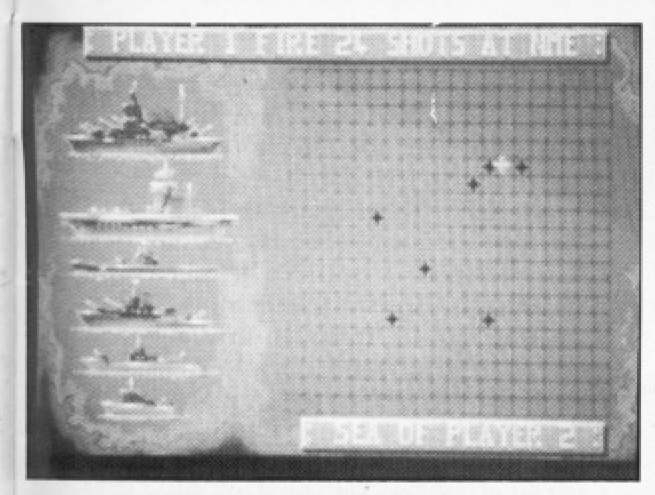
Budget price is a variable amount but generally means under ten pounds and quite often means below five pounds. So what sort of software do we receive in this bargain basement? There are generally two types that appear. Firstly there are the specially commissioned labels of the large companies such as Smash 16 and CodeMasters which normally bring out older games as much cheaper re-releases, or slightly disguised 8-bit conversions and then there are the small, 'cottage industries' which produce limited runs on low budgets with often some quite good games.

Several budget games have found their way into my machine this time around and I have been most impressed with the majority of them. In this short scout around I shall group the games under their playing types rather than companies or types. The first that struck me were the Commando shoot 'em clones, **TNT COMBAT MISSION**, **IKARI WARRIORS** and **SAS COMBAT SIMULATOR**. Obviously two of these are re-releases with Ikari Warriors having been a big hit earlier. SAS is a new game by code masters and has large sprites and good loud music and surprisingly smooth sprites, it shares the common objective with the other two of getting your soldier (or soldiers if two play) through the jungle Rambo style. This game compares well with Ikari Warriors (ENCORE software) which sets the standard for these as the best presented, most colourful, and possibly one of the best of the genre I have encountered with its very large and friendly arcade conversion figures and the touches of cartoonlike humour encountered within it. Both of these games represent the value for money side of the market but, unfortunately, TNT Combat Mission (SMASH 16) comes a poor third when compared to these. Originally released as TNT it does not feature the friendly controls or the large sprite effects, indeed it is something of a warning with budget re-releases. If the name is changed from the first issue, perhaps they hope it will not be remembered? Of the three shoot-em ups I just preferred Ikari Warriors, but that is a re-release, and SAS simulator is a very close second for a newly developed game.

The next types of game that come in proliferation are the variants of the platform and ladders games. The games here are two of B.WARE's, **BILLY BOUNCE** and **JUMP JACK**, and Encore's **BEYOND THE ICE PALACE**. The two B.WARE games are novel and were obviously constructed on the same plan since, although the characters are different, the concept remains the same. Both games are superbly illustrated with large sprites of friendly characters, Jump Jack is a small devil while Billy Bounce is a Ball. The biggest difference between the two is that Jump Jack takes place on a limited screen that needs items to be collected in order to leave a locked door while Billy Bounce has a large scrolling screen to bounce around in order to find his objects. Both games are amusing and frustrating and the difference in screen format allows enough individuality to make them both worthwhile purchases. When compared with the Ice Palace though both seem to pale slightly. This is a cheaper version of a fairly successful arcade romp with a small and beautifully formed Barbarian leaping around exploring dank underworlds, meeting exotic monsters and, with the help of the earth spirit pig, killing them. Both music and animation here are strong and I remember recommending this in an earlier Page 6. The game is still as good and even cheaper. It is perhaps unfair to compare Ice Palace to the two B.WARE games since they have different ways of obtaining customer satisfaction. Both B.WARE games have adequate and pleasant spot effects whereas the Ice Palace maintains all the full price sound and effects it received long ago. Any of those three are an excellent buy and all are worth trying.

To complete this tour it is worth looking at the 'thoughtful' games Smash 16's **WARLOCK'S QUEST** and the wonderful **CAPTAIN BLOOD**, Mastertronic's **HUNTER KILLER** and Encore's **BATTLESHIPS**. All these are re-released games, although the Warlock's Quest is more Arcade Adventure in the mould of Sorcery. It has a split level screen with small sprites which, although entertaining, is not up to Ice Palace standard and the strategy element is not strong enough to make it an adventure. Battleships is a cheaper version of a previously reviewed game that in this age of save the trees deserves buying if only to save the paper used in this schoolboy diversion. It is loud and noisy, user friendly and fun to watch, you can even play on your own. Hunter Killer is an excellent submarine simulation that is deserving of long reviews, suffice it to say that the graphics and specialised effects on this mouse controlled game make it a must for strategy enthusiasts. It offers a realistic feel with suitable noises, I found it great fun.





Top left - HUNTER KILLER

Top right - WARLOCK'S QUEST

Bottom left - CAPTAIN BLOOD

Bottom right - BATTLESHIPS

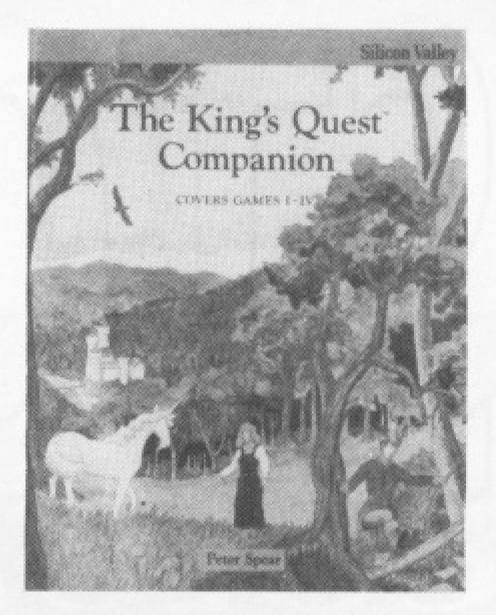
Finally the bargain of the year - Captain Blood for less than a fiver! This was a classic game containing everything you could wish for on your ST, it lacks the fully detailed manual of the original but otherwise a whole world of colour, sound and puzzlement awaits. This game could be a flagship for the cheap re-release. The only valid comment on it is that if you have not yet experienced the game, do buy it as even the soundtrack pleases! The budget market is certainly well worth investigating.

GAMES REVIEWED

BILLY BOUNCE	Bware	£5.00
JUMP JACK	Bware	£5.00
CAPTAIN BLOOD	Smash 16	£4.99
IKARI WARRORS	Encore	£9.99
BATTLESHIPS	Encore	£9.99
BEYOND THE ICE PALACE	Encore	£9.99
SAS COMBAT	CodeMasters	£4.99
HUNTER KILLER	16 Blitz	£4.99
WARLOCKS QUEST	Smash 16	£4.99
TNT COMBAT MISSION	Smash 16	£4.99

BOOKS

THE KING'S QUEST COMPANION



A Review by John R. Barnsley

This new book on the Sierra King's Quest series does more than provide answers and maps to games I to IV. Author Peter Spear skilfully weaves and elaborates on Roberta Williams' stories about the world of Daventry, transforming a mere clue book into an entertaining story.

According to the author, it all began when he started "receiving electronic mail from Daventry". The mail was from one Derek Karlavaegen, a self-described writer and magician, who dwells in that land. In his messages he describes those fantasy worlds in far more detail and colour than is possible in the games themselves, and Spear edited Karlavaegen's messages into stories that guide the reader through each of the quests.

The first section of the book is ideal for people who wish to discover more about the fantasy world they're exploring, and at the same time find the answers to a puzzle or two along the way. This is fine because, unlike a standard walkthrough, there is little chance of unintentionally reading more than you need to know and spoiling the fun by solving other puzzles yourself. This particular section covers about 200 of the book's 362 pages. The solutions to the games are treated in a more direct manner in the section entitled 'The Easy Way Out'.

A 'Things To Come' section tells how to deal with each of the main puzzles, and you get step-by-step solutions and maps in 'How To Do It'. The King's Quest IV solution, for example, lists the five quests that you must complete and warns you to avoid areas like the Ogre's House in the early stages, and finally 'fleshing-out' the full solution to each quest.

The final section of this book is 'An Encyclopaedia Of Daventry', compiled by Spear, which alphabetically lists every creature, person, object and place in the land, and then notes the King's Quest games they are to be found in, providing a suitably flowery description that explains it's purpose and where to use it. This is the section I found most intriguing, as it offers the fastest way of finding precise information on a specific topic. 'The Final Score' answers a persistent question: "How do you get all the points in each game?".

If I had to buy a clue book about the King's Quest series, this is the one I'd want. In addition to telling you everything you ever wanted to know about Daventry but were too lost-in-the-woods to ask, Peter Spear spins some fascinating tales of his own!

THE KING'S QUEST COMPANION
by Peter Spear
Published by Silicon Valley/Osborne McGraw-Hill
Available from Page 6 at £14.95

PeterHickman's

STOS COLUMN

OUR STOS COMPETITION

This issue sees the end of the super competition I launched about four months ago, at least it would be if I had received any entries!!!! Yep, that's right, I have not seen one disk pop through my letter box containing an 8-bit classic. So after a short consultation with Richard (I can't stand the stress) Vanner and Aaron (I've just thought of another brilliant game I can write with STOS) Fothergill we have decided to change nature of the competition a bit.

1. **The closing date is now August 25th**

2. **Instead of writing a conversion of any old 8-bit game, we now want a platform game which is faithful to old favourites like Miner 2049er, Manic Miner, Lode Runner and Jump Man**

3. **With your entries remember to include your name, address, phone number (if you have one), program source code (if you submit a compiled program), and finally please tell us if your program has any special requirements**

to remind you of the brilliant prizes on offer here is a complete list

FIRST PRIZE

STOS MUSICIAN, STOS MAESTRO PLUS, STOS COMPILER, SPRITES 600, THE TOTAL MAP EDITOR (TOME) and MINI OFFICE PROFESSIONAL (COMMS, SPREADSHEET AND GRAPHICS)

SECOND PRIZE

GAMES GALORE, SKYSTRIKE PLUS, LANCELOT, TIME & MAGIC and STOS MAESTRO (not the Plus version)

THIRD PRIZE

THE THREE FUN SCHOOL 2 PACKAGES (under 6's, 6-8's, and over 8's)

As if that wasn't enough Mandarin are putting together a new edition of GAMES GALORE (surprisingly called GAMES GALORE II) and they want some more stuff to go on it, you never know it might be your game! Of course if I don't get any entries this time I will just keep MINI OFFICE and flog the rest for a nice profit, so get writing and send your brilliant platform games to me at the usual address!!

Over the past few issues you may have noticed that I have been going over-the-top with information for products that Mandarin never seem to launch. This is going to be the final update until they are released because to tell you the truth it's getting pretty boring saying the same things month after month. To be fair to Mandarin they have suffered a bit of bad luck concerning a few of their STOS releases but hopefully (fingers crossed!) this summer should see a steady stream of STOS related products appearing in the shops. First on my list is STOS Musician, this little gem has been totally rewritten since news of its release broke in November, it looks fabo but I still don't have a positive release date. Cartoon Capers, winner of the STOS competition has finally appeared, I have a review copy which (unfortunately) seems to have been slightly damaged in transit so all I could salvage from the two disks was the twin joystick extension which allows you to read both joystick ports, look out for a review in the next issue. Last but not least is STOS VIDI the video digitiser. This is a tricky one, I have seen the hardware and the STOS extension which controls the beastie but the editor software has yet to be written, so once again there is no positive release date.

While I'm on the subject of STOS products, Robin Edwards of Budgie UK has sent me some copies of their latest licenseware STOS games, Mr Dig, Tank Battle, Crystal Caverns and Space Blob. All of the games are available from the Page 6 PD library, so check 'em out. Unfortunately the source code is not included with any of them, perhaps Budgie would consider publishing a collection of STOS source so that everybody can take a look at how Robin has achieved such good results.

BOOT SECTOR PROTECTION

Programming time. First up is a neat utility by Daniel Spooner. It consists of two programs, one writes a unique code onto the boot sector of the disk, the other is a small program to read the boot sec-

tor to see if it contains your code. Type in PROGRAM 1, here's how it works.

LINES 10-270 Displays the credits and a short message from the author
LINE 280 Peek's location 1190 to check the status of the ST disk drive(s), if only drive A is present this location will hold a value of zero
LINES 320-340 Make sure there is enough memory to reserve a bank that will hold the sector data
LINE 350 Calls the TOS function 8 (FLOPRD - read disk sector) using the STOS Trap function
LINE 360 Checks to see if the sector was read properly
LINE 370-450 Let the user enter ten numbers. These are stored in the array CODE()
LINES 460-470 Write the numbers contained in CODE() into the start of the memory bank reserved earlier (which now holds the sector data)
LINES 480-490 Execute TOS function 9 (FLOPWR - write disk sector) and check to make sure no error occurred (any errors detected by the TOS routine are put into DREG(0))

Having typed that it, stick a nice freshly formatted disk into the drive, save the program then run it. You will be prompted to input some data, enter ten numbers (try 10-100 for now) remembering to press RETURN after each number, if all goes well the program will display the message "Protection Complete", of course if it doesn't then there is something wrong with your disk!! Ok now you are ready to type in the program which checks the disk for the boot sector information - PROGRAM 2.

HOW IT WORKS

LINE 60 Clears the screen
LINE 70 Jumps to the sector checker
LINE 80 Displays a nice message if the sector checker shows that the disk has been imprinted with your code
LINE 5000 Sets up an array to hold your code and creates a memory bank to hold the sector

continued ☛

```
10 rem COPY PROTECTER
20 rem
30 rem By Daniel Spooner
40 rem
50 TEXT$=" COPY PROTECTER is a program which enables you to create a 'Funny'
format to    protect your games from being copied 'Disk to Disk'.  It works best
with the    compiler as no one can look through you program for the codes....
COPY PROTECTER simply changes the some of the address's in first sector. Then
your program can look for these changes and take the appropriate steps - e.g.
The system might crash or go into a Demo Mode, locking the user out."
60 TEXT$=TEXT$+"Games use   this method as GEM and most other disk copiers don't
copy the boot sector. Don'tbe mean and put it on all your games as STOS is good
base for Public Domain     programs! And you would stop people copying!"
65  :
70 rem SET UP SCREEN
80  :
90 fade 3 : wait 27 : cls : click off : key off : curs off : hide on : mode 0 :
palette $0,$777,$0,$777 : wait 10 :
100 TIL$="COPY PROTECTER! " : CRED$=" By Daniel Spooner" : CRED$=flip$(CRED$)
110  :
120 rem DO A FANCY SCROLL!
130  :
140 def scroll 1,0,40 to 320,48,-4,0 : def scroll 2,0,64 to 319,72,4,0
150 for LOOP=1 to len(TIL$) : under on : locate 39,5 : print mid$(TIL$,LOOP,1);
160 wait vbl : scroll 1 : wait vbl : scroll 1 : next LOOP
170 for LOOP=1 to 20 : wait vbl : scroll 1 : wait vbl : scroll 1 : next LOOP
180 for LOOP=1 to len(CRED$) : locate 0,8 : print mid$(CRED$,LOOP,1);
190 wait vbl : scroll 2 : wait vbl : scroll 2 : next LOOP
200 for LOOP=1 to 10 : wait vbl : scroll 2 : wait vbl : scroll 2 : next LOOP
210 under off : locate 0,21 : centre "P L E A S E   H I T   A N Y   K E Y !"
220 wait key : fade 3 : wait 27 : mode 1
230  :
240 rem NOW ON WITH THE MAIN PROGRAM
250  :
260 home : under on : centre "COPY PROTECTER!" : under off
270 print : print : print TEXT$ : wait 5 : palette $0,$777,$0,$0
280 print : print : under on : print "Protecter now in Action!" : under off :
print : print : if deek(1190)=1 then DR$="A" : goto 290 else input "Enter Drive
(A/B) ";DR$ : DR$=upper$(DR$) : if DR$="A" or DR$="B" then 290 else bell : print
: print : print : print "Sorry! Can't use that drive!" : goto 220
290 DR=asc(DR$) : DR=DR-65
300  :
310 rem CHECK DISK AND MEMORY
315  :
320 print : print : print : print "Please Insert Disk to Protect!" : wait key :
print : print : print : print
330 if free<15000 then print "Sorry, there is not enough memory to load Sector!"
: print : print : print "Please free up about 15000 bytes!" : wait key : default
: end
340 erase 10 : reserve as work 10,10000 : MEM=start(10)
350 trap 14,8, .l MEM, .l 0, .w DR, .w 1, .w 0, .w 0, .w 9
360 if dreg(0)<>0 then print : print : print "Error in loading Sector... (Disk
Faulty?)" : wait key : default : end
370 print : print : print : print "Disk Sector Loaded - Now input data..." :
print : print : print : dim CODE(10) : COUNT=0
380  :
390 rem NOW ENTER DATA
400  :
410 repeat : inc COUNT
420 input DAT$
430 if val(DAT$)>30000 then print : print : print "   Entry to high - try
again!" : print : print : goto 420
440 CODE(COUNT)=val(DAT$)
450 until COUNT=10
460 print : print : print : print "Now Saving Data!" : ERR=false
470 POK=MEM : for A=1 to 10 : poke POK,CODE(A) : inc POK : next A
480 trap 14,9, .l MEM, .l 0, .w DR, .w 1, .w 0, .w 0, .w 9
485 if dreg(0)<>0 and ERR=false then print : print : print "Unable to Save Data
(write protected?)" : wait key : print : print : print "Try To Save Data
Again..." : ERR=true : goto 480
486 if dreg(0)<>0 and ERR=true then print : print : print "Sorry I cannot Change
this disk at all!" : print : print "Return to Editor..." : wait key : default :
end
490 print : print : print : print "Protection Complete!" : wait key : default :
end
```

Listings 1 and 2 - Boot Sector Protection

```
10 rem FUNNY FORMAT CHECKER
20 rem
30 rem By Daniel Spooner
40 rem
50  :
60 key off : curs off : hide on : mode 0
70 gosub 5000 : rem GOSUB TO THE FUNNY FORMAT BIT!
80 home : centre "Welcome, at least you don't pirate!" : print : print : print
"Just to show you that sector..." : print : MEM=start(10) : for A=1 to 10 :
print peek(MEM) : inc MEM : next A : print : print "Thank you for using COPY
PROTECTOR!" : wait key : default : end
5000 erase 10 : reserve as work 10,10000 : MEM=start(10) : dim CODE(10) :
CRAH=false
5010 CODE(1)=10 : CODE(2)=20 : CODE(3)=30 : CODE(4)=40 : CODE(5)=50 : CODE(6)=60
: CODE(7)=70 : CODE(8)=80 : CODE(9)=90 : CODE(10)=100
5015  :
5020 trap 14,8, .l MEM, .l 0, .w 0, .w 1, .w 0, .w 0, .w 1
5030  :
5040 for LOOP=1 to 10 : if peek(MEM)<>CODE(LOOP) then CRAH=true
5050 inc MEM : next LOOP
5060  :
5070 if CRAH=true then flash 0,"(700,3)(500,3)(300,3)(100,3)(300,3)(500,3)" :
repeat : centre "SOFTWARE PIRATE SOFTWARE PIRATE!" : print : boom : until
true=false
5080 return
```

LINE 5010 Puts the code in the array CODE()
LINE 5020 Reads the boot sector into the memory bank
LINES 5040-5050 Check to see if your code matched the one on disk
LINE 5070 If the code is different to yours this line does a bit of flashing and calls you a pirate!! Nice huh?

I would just like to say that neither the publishers of this magazine or myself can be held responsible for any disks corrupted by using this program, although if you use it properly it could be a very useful utility, it works for me! Still, if you take the advice of one of my old computer science teachers the only way to protect your software from piracy is to lock it in a safe, and that was a recommended exam answer!!

LET'S GO CYCLING!

Demo's now. Many of you out there in computerland will be familiar with the type of programs that are coming up, they follow some very sound principles that have been discussed in great length within magazines such as COMPUTE!, BYTE, and PERSONAL COMPUTER WORLD, all of which are fabo magazines but don't feature any STOS stuff. Programs 3,4, and 5 all draw strange patterns on the screen, and use the MOD function to produce cycling colours. They all follow a very similar format so I will just give you a breakdown of PROGRAM 3.

HOW IT WORKS

LINES 80-170 Define the main variables, note the # symbols define floating point numbers. Try changing R2 to 60 and R4 to 20
LINES 190-280 Calculate coordinates and draw the lines. The colour is cycled from 1 to 15 (and back again) by using the MOD function. Try changing the SET#/0.2 in LINE 230 to other values to produce some more weird patterns
LINES 310-380 Contain yet another colour cycling routine, this one simply reads the value of a colour register and places it into the register below that one, thus cycling the colours down

```
10 rem ^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^
20 rem ^^                       Draw Demo 1                       ^^
30 rem ^^                      By P.J.Hickman                     ^^
40 rem ^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^
50 key off : mode 0 : curs off : flash off : hide on
60  :
70 rem **** Define variables ****
80 TW#=2*pi
90 XCENTER=151
100 YCENTER=93
110 R1=150
120 R2=35
130 R3=65
140 R4=85
150 I#=pi/64
160 SET#=pi/3
170 C=1
180  :
190 rem **** Main Loop ****
200 for T#=0 to 1*TW# step I#
210 X1#=R1*cos(T#)+XCENTER
220 Y1#=R2*sin(T#)+YCENTER
230 X2#=R3*cos(T#+SET#/0.2)+XCENTER
240 Y2#=R4*sin(T#)+YCENTER
250 ink C
260 draw X1#,Y1# to X2#,Y2#
270 C=C mod 15+1
280 next T#
290  :
300 rem **** Yet another colour cycling routine *****
310 repeat
320 C=colour(1)
330 for LOP=1 to 14
340 colour LOP,colour(LOP+1)
350 next LOP
360 colour 15,C
370 wait 3
380 until inkey$<>""
390 default
```

```
10 rem ^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^
20 rem ^^                       Draw Demo 2                       ^^
30 rem ^^                      By P.J.Hickman                     ^^
40 rem ^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^
50 key off : mode 0 : curs off : flash off : hide on
60  :
70 rem **** Define variables ****
80 TW#=2*pi
90 XCENTER=151
100 YCENTER=93
110 R1=115
120 R2=85
130 R3=40
140 R4=45
150 I#=pi/5
160 I2#=pi/20
170 SET#=pi/3
180 C=1
190  :
200 rem **** Main Loop ****
210 for T#=0 to 1*TW# step I#
220 for T2#=0 to TW# step I2#
230 X1#=R1*cos(T2#)+XCENTER
240 Y1#=R2*sin(T2#)+YCENTER
250 X2#=R3*cos(T#)+XCENTER
260 Y2#=R4*sin(T#)+YCENTER
270 ink C
280 draw X1#,Y1# to X2#,Y2#
290 C=C mod 15+1
300 next T2#
310 next T#
320  :
330 rem **** Yet another colour cycling routine *****
340 repeat
350 C=colour(1)
360 for LOP=1 to 14
370 colour LOP,colour(LOP+1)
380 next LOP
390 colour 15,C
400 wait 3
410 until inkey$<>""
420 default
```

Above and top right - Peter Hickman's graphics demos

Bottom right Francois Lionet's Robots demo

```
10 rem ^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^
20 rem ^^                     Draw Demo 3                        ^^
30 rem ^^                    By P.J.Hickman                      ^^
40 rem ^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^
50 key off : mode 0 : curs off : flash off : hide on
60  :
70 rem **** Define variables ****
80 TW#=2*pi
90 XCENTER=151
100 YCENTER=93
110 R1=100
120 R2=85
130 I#=pi/160
140 LOBES#=3
150 SET#=pi/3
160 C=1
170  :
180 rem **** Main Loop ****
190 for T#=0 to TW# step I#
200 X1#=R1*cos(T#*LOBES#)+XCENTER
210 Y1#=R2*sin(T#)+YCENTER
220 ink C
230 draw XCENTER,YCENTER to X1#,Y1#
240 C=C mod 15+1
250 next T#
260  :
270 rem **** Yet another colour cycling routine *****
280 repeat
290 C=colour(1)
300 for LOP=1 to 14
310 colour LOP,colour(LOP+1)
320 next LOP
330 colour 15,C
340 wait 3
350 until inkey$<>""
360 default
```

```
10 rem ----------------------------------------
20 rem              Defile de robots!
30 rem  ou comment afficher 16 gros sprites
40 rem               en collision
50 rem ----------------------------------------
60 rem
70 rem > Initialisation de l'ecran
80 rem
85 load "A:DROID.MBK"
90 key off : curs off : hide on : mode 0
100 AD=hunt(start(1) to start(1)+length(1),"PALT")+4
110 for N=0 to 15 : colour N,deek(AD+N*2) : next
120 update off
130 logic=back
140 rem
150 rem > Initialisation des sprites
160 rem
170 for N=1 to 15
180 sprite N,N*16,75,1
190 anim
N,"(1,1)(2,1)(3,1)(4,1)(5,1)(6,1)(7,1)(8,1)(9,1)(10,1)(11,1)(12,1)(13,1)(14,1)(1
5,1)1"
200 move y N,"(1,1,50)(1,-1,100)(1,1,50)1"
210 move on N : wait 7 : next N
220 anim on
230 rem
240 rem > Boucle d'animation
250 rem
260 repeat
270 cls logic
280 redraw
290 screen swap
300 wait vbl
310 until mouse key
320 default
```

If anybody comes up with any interesting variations on these programs, send 'em to me and I'll stick the best ones in the next issue (if I get any!!!!)

SEND IN THE DROIDS

This issue's last program is a mega demo from Francois Lionet, it consists of 15 robots moving up and down in a wavy line. Type in PROGRAM 6, but before you run it make sure you have a disk containing the file "DROID.MBK" (from the STOS accessories disk) in your drive.

HOW IT WORKS

LINE 85 Loads the sprites
LINES 90-130 Sets up the screen, grabs the sprite colour palette and turns the automatic sprite update
LINES 170-200 Draw sprites 1-15 in turn, and starts them moving
LINE 210 This line is interesting because it causes a small delay between each sprite initialisation, this means the sprite has a small time to move before the next sprite appears, thus giving the wavy effect!!
LINE 220 Switches the animation on
LINE 260 Starts the manual sprite update process
LINE 270 Clears the background screen
LINE 280 Redraws all the sprites (in the background screen)
LINE 290 Swaps the screens making the sprites instantly appear
LINE 300 Waits for 1 VBL
LINE 310 Waits for the mouse key to be pressed

LEARNING TO SPELL

Before I pop off let me just tell you about a new addition to the Page 6 PD library. A new educational program called Magic Speller has recently been sent to me by Jim Flewker (hi Jim!), Jim also wrote the excellent Multimat program which can be found (along with my Treasure Search game) on ST231. The main attraction of Magic Speller is that it features speech, not digitised but actually STOS generated speech!! The program which does all the work is actually a PD speech generator which has been available for some time - SPEAKTEX. This program was altered slightly (so that it didn't interfere with the STOS interrupts) by Martin Taylor, a copy of the program together with a short tutorial from me and documentation will be available on the next Page 6 STOS column disk (together with programs from the past few issues), so for more details of both these disks drop Page 6 a line.

COMING NEXT?

That's about it for this issue, next time I will (hopefully!) do a SPEAKTEX tutorial, a couple more demo's and on a more sinister note I will be discussing the misuse of STOS as an easy medium for distributing various types of VIRUS. Until then keep STOSing and don't forget to send me any questions, programs, and most importantly competition entries (please!!!).

Write to me as follows:

Peter Hickman
36 CLEVERLY ESTATE
WORMHOLT ROAD
LONDON W12 OLX

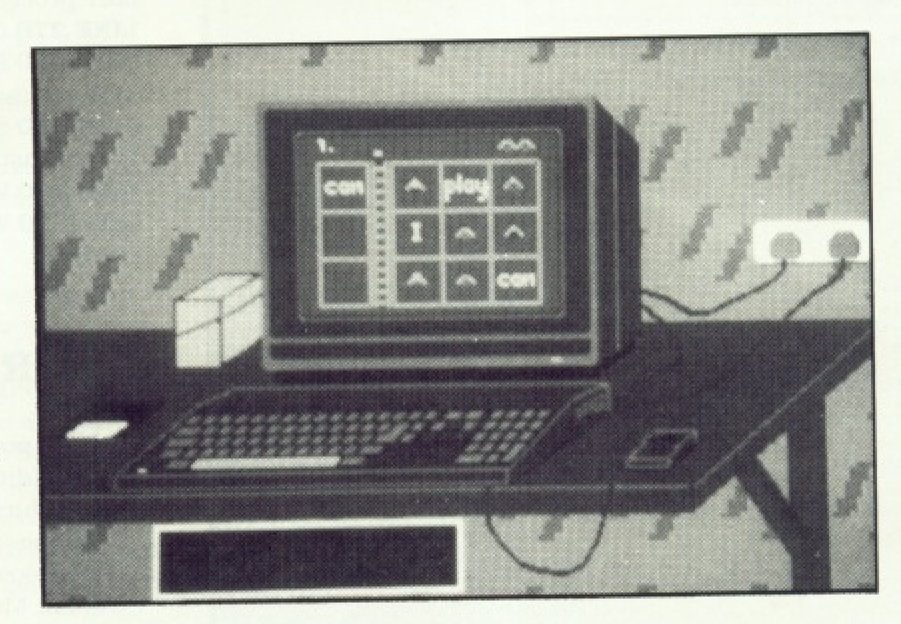
PLAY AND READ

LEARN TO READ WITH PROF

This unusual educational package from Prisma Software is aimed at helping children learn to read. It has no age guidance on it, but should be suitable for any young child who seems ready to begin learning. It uses lower case letters throughout, teaches words chosen from an educationally approved word list, and conforms with the National Curriculum requirements, so should be compatible with other children's reading schemes and books. I received only Part 1 for review, but there are three further parts available separately which build on the words learned here.

The package is expensive, but does include rather more than usual. There are two disks, one containing an introductory story program and the other a learning game. There are also five slim, illustrated books containing the words learned in simple story form. Finally, there's an audio cassette featuring actress Patricia Hayes, which contains a 10 minute introduction to the package. This is designed to be used along with the story disk, and provides associated graphics. The two are designed to run in synchronisation - and work impressively well together. The graphics are good, being big, bold, colourful, and very "picture book" in style.

The main program, the learning game, is structured into five "books", each corresponding with one of the printed books provided. Each book is further subdivided into five steps, the successful completion of each acting as a progress milestone. The opening menu allows the game to be started at any step in any book, but once into the game you can't get back to this menu without rebooting, should you change your mind.



Title:	**Play and Read Part 1 - Prof Plays A New Game**
Publisher:	**Prisma Software**
Price:	**£29.95**
Reviewer:	**John S Davison**

PLAY THE GAME ....

Each step consists of a simple word game, which basically consists of matching like words. This is done by guiding a little animated figure to a word on the left of the screen using the arrow keys, then finding the same word amongst those shown elsewhere on the screen. The child then has to read the word out loud and guide the figure to it as before. This usually involves guiding the figure up or down a ladder to get to the correct part of the screen. Although the controls are easy to use, the game should really be played under adult supervision, so guidance can be given when required.

A correctly matched pair of words results in the little figure jumping for joy, and when all the words displayed have been paired correctly another cute little animated figure appears at the top of the screen as a reward. New words are used after two consecutive all correct screens are completed. Incorrect pairings result in a rude noise, removal of the offending word from the screen, and no reward.

Once the requisite number of reward figures have been earned the game screen dissolves into a colourful picture, captioned with some of the words learned in the game. The child can then practice reading these, before proceeding to the game's next step level to learn more words. This continues up through five steps, with different pictures being used at the end of each. Some pictures incorporate tiny animated characters to add variety and interest.

The game graphics are simple and clean and the sprite animation is generally well done. The end of step pictures are similar to those used on the introduction disk. Sound is restricted to simple tunes, musical phrases, and occasional bleeps and burbles, and I feel the authors could have tried harder in this department.

.... NOW READ THE BOOK

When all five steps have been completed the child may read the book relating to those steps. By this stage he/she should be able to recognise all the words, and hence successfully read the book right through. This is a major achievement, and should work wonders for the child's self confidence. At the end of the fifth book the child should have a sight vocabulary of 63 words.

Although I found the package to be a well constructed and presented teaching/learning aid, I do have a couple of criticisms. Firstly, the whole series seems to be based on the character Prof, but he's hardly mentioned anywhere except on the box! He's referred to variously as "the figure" or "the little red man" in the instructions, book, and cassette! He does appear in illustrations throughout the five books, but I can't understand why the authors haven't given him a stronger identity. Perhaps they do in later parts of the series.

Secondly, the same word game is used throughout, which could in some cases lead to that common problem afflicting many educational programs - tedium. The authors could have used a different game format for each book to add more variety. However, using the same game does mean a familiar learning vehicle is available throughout, which some children would find reassuring.

Despite these criticisms I liked the package, and I can imagine its intended audience enjoying using it. And if it makes learning to read more enjoyable then it's achieved its purpose. It's rather expensive, so try to see it demonstrated before buying.

The RESOURCE FILE
where to find support for your Atari

The Resource File is a service provided by PAGE 6 to help Atari owners find sources of information, help and supply. An entry in this feature does not necessarily imply any endorsement by PAGE 6. The retailers shown are those who are known to have supported Atari for some time but things change and readers are advised to check for themselves to ensure that the information is still current. We would ask any readers who find information to be inaccurate or out of date to let us know so that an entry may be amended or deleted.

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The following retailers have been removed from our Resource File

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Tel. 0270 214118

YORK COMPUTER CENTRE
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Davygate
York
YO1 2SU
Tel. 0904 641862

USER GROUPS

ABC
Contact Mike Donoghue, 135, St. Leonards Road, Leicester, LE2 3BZ. Tel. 0533 700190. Retailer and both 8-bit and ST user groups.

A.C.E. USER GROUP
Contact Martin Sharpe, 28, Brooklyn Court, Bradford Road, Cleckheaton, West Yorks, BD19 4TJ. Tel.0274 851131 (24 hours). Monthly meetings, newsletter, trips, discounts etc.

A. U. G. (IRELAND)
Contact Mike Casey, 3, St. Kevins Park, Kilmacud, Co. Dublin. Ireland. Tel. 01 881830 or BBS 01 885634 (24 hours). Monthly meetings and newsletter.

BESTWOOD 8-BIT USER GROUP
Contact David Taylor, 60 Stevenholme Crescent, Bestwood Park, Nottingham, NG5 5JW. Tel. 0602 209735. 8-bit local users only

BOURNEMOUTH AND POOLE ATARI USER GROUP
Contact Colin Hunt. 248, Wimborne Road, Oakdale, Poole, Dorset. ST, 8-bit, hardware and software development.

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Contact Gary Brummage, 22, Ridley Road, Bury St. Edmunds, Suffolk, IP33 3HS. Please send SAE for details.

COLCHESTER ATARI USER GROUP
Contact Mike Harrison, 172, Harwich Road, Colchester, Essex, CO4 3DD. Meets fortnightly, supports all Atari systems. Tel. 0206 867931 or 0206 42900

CLUB CENACLE
Contact Michel Breton, Club Cenacle, B.P. 49, 95110, Sannois, FRANCE. XL, XE and ST users, newsletter, PD library, contact with users and user groups anywhere in the world welcome.

FaST (Fast ST Basic Users Group)
Contact Simon Rush, 42 York Road, Rayleigh, Essex, SS6 8SB. Tutorials in Basic and 68000. SAE for full details.

FLOPPYSHOP ST
Contact Steve Delaney, 50, Stewart Crescent, Northfield, Aberdeen, AB2 5SR. Tel. 0224 691824.

The GATEWAY CLUB
Contact Phil Herberer, 164d Radcliffe Road, Lakenheath, Suffolk. Tel. (Eriswell) 2363. All computer club with Atari section. Meets once a month.

LACE (LONDON ATARI COMPUTER ENTHUSIASTS)
Contact Glenn Leader, 143 Richmond Road, Leytonstone, London, E11 4BT. Tel. 01 556 0395. XL,XE, ST users. Great newsletter and PD library

LUG'S (LEEDS USER GROUP)
Contact Dave on 0532 717712 anytime. 1050, 810, cassette users welcome. Send SAE to P.O. Box TR7, Leeds, W. Yorks LS12 5PG

LVAUG (LEA VALLEY ATARI USERS GROUP
Contact Matt Tydeman, 125 Cadmore Lane, Cheshunt, Herts, EN8 9JH. Regular meetings and newsletter, 8/16 bit.

MACCLESFIELD COMPUTER CLUB
Contact Peter Solomon. Tel. 0625 20782 evenings and weekends. All computer club with Atari section. Meets fortnightly.

NORTHERN ITALY ST FANS
Contact Carlo Bianchini, Viale Argonne 12, 27100 PAVIA, Italy

ROCHDALE ATARI COMPUTER ENTHUSIASTS (R.A.C.E.)
Contact The Secretary, P.O. Box 1, Rochdale, Lancs OL12 8TQ. SAE appreciated. All Ataris, meetings fortnightly

SIGATARI
Contact Glenn Leader, 143, Richmond Road, Leytonstone, London, E11 4BT. Tel 01 556 0395. For those interested in more unusual applications.

ST USER CLUB
Contact Tony, 8, Ethnard Road, Peckham, London, SE15 1RU. Members with double sided drives

STOURBRIDGE ATARI USER GROUP
Contact Les Taylor, 99, Bredon Road, Stourbridge, Wets Midlands, DY8 4LA. Tel 0384 379575. Meetings once a month for 8 bit computers.

S.W.A.G. (SOMERSET WEST ATARI GROUP)
Contact J. Evans, 14, Plein Street, Somerset West, 7130, Cape Province, South Africa. ST and 8 bit user group offering help and assistance to users in South Africa including township schools. Worldwide support appreciated.

VTB ATARI COMPUTER CLUB
Contact Christian Delabarre, Hekstraat 7, 9050 Evergem, Belgium. Tel. 091/26.29.29. For XI,XE,ST. Organised talks, visits etc.

WESTMORELAND ATARI COMPUTER ORGANIZATION (W.A.C.O.)
Contact Chuck Rosso, 209 Emrose Dr., Pittsburgh, PS 15235, U.S.A. Covering 8-bit, large PD library catalog, will mail.

WORLD ATARI PENPALS Int. User Group (WAP)
Contact Max Terveen, Magerhorst 8, Alphen a/d Rijn, 2402 LP, The Netherlands. Tel. 01720 45583. Members in USA, Canada, France, U.K., Greece, Germany, Saudi Arabia. Have circulating disk (8-bit and ST). Mail only.

BBS

Name: **THE VILLAGE**
Number: 01 464 2516
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Features: 8 bit area and ST area

Name: **CHARLY**
Number: 0451/31642 Germany 010/49/451/31642 from England
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Features: Atari 8-bit and ST areas. P.D. software. Some German required!

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Features: 8 bit with Downloads, hints, swaps etc.

Name: **CRYSTAL TOWER BBS**
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Features: Atari section which needs your support!

Name: **CITY UNDERGROUND**
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Features: 8 bit and ST

Name: **THE GNOME AT HOME**
Number: 01 888 8894
Hours: 24 Hours/7 days
Baud: V23 viewdata
Features: ST area frame *1632.0#. ST Babble starts on frame *1632.9#

Name: **CBABBS**
Number: 021 430 3761
Hours: 24 Hours/closed Thursdays
Baud: 300
Features: ST/8 bit, Email to USA and Canada

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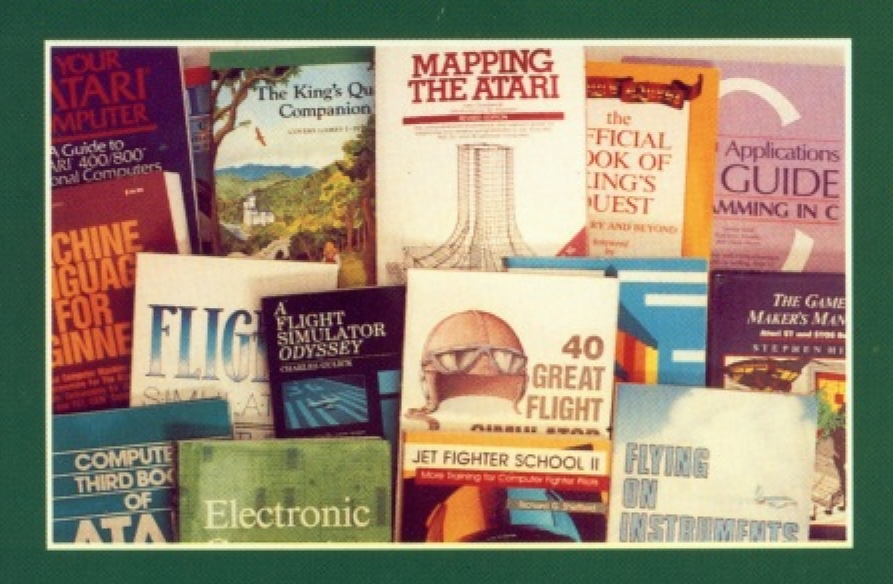


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